

**AIR EMISSION PERMIT NO. 05300010-003**

**Administrative Amendment**

**IS ISSUED TO**

Northwest Airlines Inc

**NORTHWEST AIRLINES INC - MPLS/ST PAUL**

7500 Airline Drive C9025

Minneapolis, Hennepin County, MN 55450

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table below.

This permit amendment supersedes Air Emission Permit No. 05300010-002 authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such as are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

**Permit Type:** Federal; Pt 70/Limits to Avoid NSR

**Operating Permit Issue Date:** June 15, 2005

**Administrative Amendment Issue Date:** January 22, 2009

**Expiration Date:** June 15, 2010

– Title I Conditions do not expire.

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Don Smith, P.E., Manager  
Air Quality Permits Section  
Industrial Division

for Paul Eger  
Temporary Commissioner  
Minnesota Pollution Control Agency

**Permit Applications Table**

<b>Permit Type</b>	<b>Application Date</b>	<b>Permit Action</b>
Total Facility Operating Permit	September 13, 1995	001
Major Amendment	February 14, 2006	002
Administrative Amendment	November 13, 2008	003

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**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

**PERMIT SHIELD:**

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

## **FACILITY DESCRIPTION:**

Northwest Airlines (NWA) operates a maintenance base to conduct aircraft maintenance and repairs for passenger aircraft. Activities include disassembly and repair of aircraft components, metal plating, painting, media blasting, welding, jet engine testing, and reassembly of aircraft. NWA also conducts aircraft performance checks as required by the Federal Aviation Administration.

The permitted facility includes operations in buildings B, C, F, and G. The permit includes federally enforceable operating conditions, emission limitations, and material usage limitations such that the facility is considered a non-major source under federal New Source Review regulations. The facility is a major source under the Part 70 operating permit program. The Title V operating permit also authorized installation and operation of a new emergency generator at Building F.

### **Permit Action 002: Major Amendment**

This permit action was for a major amendment to establish pressure drop ranges for CE 038 and CE 051. Also, several pieces of equipment were removed from the facility description (including EU's, CE's, SV's, and insignificant activities), other changes were made to the facility description and the facility's PTE was re-calculated.

#### Removed Equipment:

EU: 003, 011-015, 018-019, 021-024, 027-028, 030-040, 050-053, 060, 080-081

SV: 001-020, 022-024, 026-037, 045-048, 054

CE: 001, 009, 010, 014, 018, 020, 022, 024-027, 029-033

It was determined that the facility was exempt from the NESHAP MMMM due to provisions outlined in 40 CFR § 63.3881(c)(2,3,10, and 11) and PPPP due to provisions outlined in 40 CFR § 4481(b) and 40 CFR § 63.4481(c)(2,11, and 12).

All of the units that were subject to 40 CFR pt. 63, subp. N, Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks, have been removed; therefore the facility is no longer subject to the standard and all the requirements in GP012 were removed.

The vapor degreaser subject to 40 CFR pt. 63, subp. T, Halogenated Solvent Cleaning, has been removed from service; therefore the facility is no longer subject to the standard and all requirements associated with EU 037 were removed.

The facility has also submitted a 112j application, because of the vacated NESHAP DDDDD.

### **Permit Action 003: Administrative Amendment**

This permit action is an administrative amendment to remove several pieces of equipment (EU041, EU084, EU085, EU086, EU087, EU088, EU089) from the facility description since they have been permanently removed from the facility. Additionally, the operator descriptions of EU090 and EU091 have been changed due to changes at the facility.

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-1**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.**

**Subject Item:****Total Facility**

<b>What to do</b>	<b>Why to do it</b>
Permit Appendices: This permit contains Appendices B, C, D, and E as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
<b>SOURCE-SPECIFIC REQUIREMENTS</b>	hdr
If the Permittee adds to the list of insignificant activities in Appendix D of this permit, by adding insignificant activities described in Minn. R. 7007.1300 subpart 3 or 4, or conditionally insignificant activities listed in Minn. R. 7008.4110, the Permittee shall determine the potential emissions of those units or activities on a ton per year basis, and annually verify that the permitted emissions from the entire facility including the insignificant and conditionally insignificant activities of Appendix D, do not exceed the major source threshold in 40 CFR Section 52.21.  This applies only to insignificant activities that would be included in Appendix D. This does not apply to boilers and heaters added to EU097, VOC sources added to EU098, generators added to EU099, test cells added to EU100, or controlled PM sources added to EU101.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
The facility currently uses ozone-depleting substances as defined in 40 CFR pt. 82. Sections 601-618 of the 1990 Clean Air Act Amendments and 40 CFR pt. 82 may apply to your facility. Read Sections 601-618 and 40 CFR pt. 82 to determine all the requirements that apply to your facility.	40 CFR pt. 82
<b>NESHAP GENERAL REQUIREMENTS</b>	hdr
At all times the Permittee shall operate and maintain the emission unit subject to the MACT standard and its associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.	40 CFR Section 63.6(e)(1)(i); Minn. R. 7011.7000
Prior to construction or reconstruction of an "affected source" under a promulgated MACT standard, the Permittee must apply for and obtain an air emission permit.	40 CFR Section 63.5(b)(3); Minn. R. 7011.7000
<b>SPECIFIC NESHAP REQUIREMENTS</b>	hdr
Except as noted below, the owner or operator shall conduct the handling and transfer of HAP-containing wastes to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.  All wastes that are determined to be hazardous wastes under the Resource Conservation and Recovery Act (RCRA) and that are subject to RCRA requirements implemented in 40 CFR Sections 262 - 268, are exempt from the requirements of the National Emission Standards for Aerospace Manufacturing and Rework Facilities.	40 CFR Section 63.748; 40 CFR Section 63.749(i); Minn. R. 7011.7320
<b>OPERATIONAL REQUIREMENTS</b>	hdr
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.  The Permittee shall develop and implement an O & M Plan meeting these requirements within 180 days of permit issuance.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Performance Test Notifications and Submittals:  Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.  Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test  The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-3**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

REPORTING/SUBMITTALS	hdr
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 3
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	Minn. R. 7019.1000, subp. 1
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> <li>1. the cause of the deviation;</li> <li>2. the exact dates of the period of the deviation, if the deviation has been corrected;</li> <li>3. whether or not the deviation has been corrected;</li> <li>4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and</li> <li>5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.</li> </ol>	Minn. R. 7019.1000, subp. 1
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	Minn. R. 7007.1150 through Minn. R. 7007.1500
<p>For changes that do not require a permit amendment:</p> <ul style="list-style-type: none"> <li>- The Permittee shall submit a Part 1 MACT application within 30 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(a).</li> <li>- The Permittee shall submit a Part 2 MACT application within 90 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(b).</li> </ul> <p>112(j) affected source is defined in 40 CFR Section 63.5. As of permit issuance, 112(j) affected sources include industrial, commercial, and institutional boilers and process heaters; brick and structural clay products manufacturing; clay ceramics manufacturing.</p>	40 CFR Section 63.52(b)(1) and 63.52(e)(1)
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	Minn. R. 7007.1400, subp. 1(H)
<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.</p>	Minn. R. 7019.3000 - Minn. R. 7019.3100
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	Minn. R. 7002.0005 through Minn. R. 7002.0095



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-4**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 001 Paint & Solvent Usage - VOC Calculations**

**Associated Items:** EU 025 Bldg B GSE Shop Degreasing Booth

EU 048 Bldg C Avionics Shop Degreasing Booth

EU 049 Bldg C Electric Shop Degreasing Booth 1

EU 061 Bldg C Cleaning Shop Degreasing

EU 062 Bldg B GSE Shop Spray Booth

EU 063 Bldg C Composite Shop Spray Booth

EU 070 C Tower Bay 5 Trench Vent

EU 071 C Tower Bay 6 Trench Vent

EU 082 Bldg C Electric Shop Degreasing Booth 2

EU 098 Misc. Painting Operations/VOC Sources

What to do	Why to do it
<p>Daily Recordkeeping - On each day of operation, the Permittee shall maintain records of the total quantity of all coatings and other VOC-containing materials used at the operations listed in GP 001. This shall be based on written usage logs, computerized chemical inventory tracking records, or equivalent methods.</p> <p>All emission units listed above and/or included in or added to EU098 as allowed in this permit shall be included in these records. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement below. The calculation of VOCs used may take into account recovered/recycled VOCs as described under the Waste Credit requirement below.</p>	<p>Title I Condition: Monitoring for Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5</p>
<p>The Permittee may exclude the "Plant Upkeep Spray Painting" portion of EU098 from the daily tracking requirements (monthly records must be available for inclusion in the 12-month rolling sum), until the GP024 VOC emissions exceed 105 tons for a 12-month rolling period. At that point, the Permittee shall immediately begin including the plant upkeep spray painting in the daily VOC records. If the 12-month rolling sum of GP024 VOC emissions returns to less than 105 tons for 3 consecutive 12-month rolling periods, the Permittee may again begin excluding Plant Upkeep Spray Painting from the daily VOC records.</p>	<p>continued from above..</p>
<p>Monthly Recordkeeping - By the last day of each month, the Permittee shall calculate and record the following:</p> <p>1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC contents of each material as determined by the Material Content requirement of this permit.</p> <p>2) The VOC emissions for the previous month using the formulas specified in this permit.</p> <p>3) The 12 month rolling sum of VOC emissions for the previous 12 month period by summing the monthly VOC emissions data for the previous 12 months.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Monthly Calculation -- VOC Emissions.</p> <p>The Permittee shall calculate VOC emissions using the equation below. This number is then used in the calculations required under GP024 of this permit</p> <p><math>V(sp) \text{ (tons/month)} = V - W</math></p> <p>where:</p> <p><math>V(sp)</math> = the total VOC emissions from solvent and paint usage during the previous month (tons)</p> <p><math>V = (A1 \times B1) + (A2 \times B2) + (A3 \times B3) + \dots</math></p> <p><math>W = (C1 \times D1) + (C2 \times D2) + C3 \times D3) + \dots</math></p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

Monthly VOC Emissions Calculation Continued:  where: V = total VOC used in tons/month; A# = amount of each VOC containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.	Minn. R. 7007.0800, subp. 4 and 5
Material Content: VOC contents of materials used shall be determined by the Material Safety Data Sheet (MSDS) or Product Datasheets provided by the supplier for each material used. If a material content range is given on the MSDS or Product Datasheet, the highest number in the range shall be used in all compliance calculations. If the specific VOC content or a range is not given, the Permittee may make an engineering estimate base on the best available information, and must maintain documentation of the determination and the information supporting that determination. Other alternative methods approved by the MPCA may be used to determine the VOC contents. The Commissioner reserves the right to require the Permittee to determine the VOC contents of any material according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS or Product Datasheet.	Minn. R. 7007.0800, subp. 4 and 5
Waste Credit: If the Permittee elects to obtain credit for VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC content for each credited shipment. 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC content of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC content of any of the materials.	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-6**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 002 Combustion Sources - NOX Limits**

**Associated Items:**

- EU 042 Bldg B Boiler 2
- EU 043 Bldg B Boiler 3
- EU 044 Bldg B JT-9 Test Cell
- EU 045 Bldg B APU Test Cell
- EU 046 Bldg B APU Test Cell
- EU 047 Bldg B JT-8 Test Cell
- EU 054 Bldg C Diesel Generator
- EU 055 Bldg C Diesel Generator
- EU 056 Bldg C Boiler 1
- EU 057 Bldg C Boiler 2
- EU 064 Bldg C Boiler 3
- EU 065 Bldg C Boiler 4
- EU 066 C Tower Diesel Generator
- EU 067 C Tower Boiler 1
- EU 068 C Tower Boiler 2
- EU 069 C Tower Boiler 3
- EU 072 Building F Boiler 1
- EU 073 Building F Boiler 2
- EU 074 Building F Emergency Generator
- EU 090 Building B Hangar 8 Heater
- EU 091 Building B Hangar 8 Heater
- EU 092 Building B Hangar 7 Heater
- EU 093 Building B Hangar 7 Heater
- EU 097 Misc. Boilers/Heaters
- EU 099 Misc. Generators
- EU 100 Misc. Test Cells
- EU 102 Bldg F Diesel Generator 2
- EU 103 Bldg F Diesel Generator 3

What to do	Why to do it
Nitrogen Oxides: less than or equal to 240 tons/year using 12-month Rolling Sum calculated using the methods described in this permit.	Title I Condition: Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
<p>All fuel combustion and engine or APU testing stations at the Facility are subject to the above NOX limit, with the exception of Insignificant Activities listed in Appendix D.</p> <p>If the Permittee replaces any boilers, generators, or test stations, adds new boilers, generators, or test stations, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP002. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. However, when calculating the emissions increase, only the hourly emissions increase (calculated per Minn. R. 7007.1200, subp. 3) shall be calculated.</p> <p>A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit.</p>	Title I Condition: Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-7**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

By the last day of each month, calculate and record the total NOX emissions, in tons, for the previous month, using the following equation:  $N(t) = N(bh) + N(g) + N(et)$  Where: N(t) = the total NOX emissions for the previous month (tons) N(bh) = the total NOX emissions from boilers and heaters for the previous month (tons, calculated as shown under GP004) N(g) = the total NOX emissions from generators for the previous month (tons, calculated as shown under GP005) N(et) = the total NOX emissions from engine and APU testing operations for the previous month (tons, calculated as shown under GP006)	Minn. R. 7007.0800, subp. 4 & 5
By the last day of each month, calculate and record the 12 month rolling sum of total NOX emissions (N(t), as calculated above).	Title I Condition: Monitoring of limit taken to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 003 SO2 - Fuel Oil Limits**

**Associated Items:** EU 042 Bldg B Boiler 2  
 EU 043 Bldg B Boiler 3  
 EU 056 Bldg C Boiler 1  
 EU 057 Bldg C Boiler 2  
 EU 064 Bldg C Boiler 3  
 EU 065 Bldg C Boiler 4  
 EU 067 C Tower Boiler 1  
 EU 068 C Tower Boiler 2  
 EU 069 C Tower Boiler 3  
 EU 072 Building F Boiler 1  
 EU 073 Building F Boiler 2

What to do	Why to do it
OPERATING LIMITS	hdr
Fuel types allowed: fuel oil and natural gas, by equipment design	Minn. R. 7005.0100, subp. 35a
Fuel Usage: less than or equal to 1900000 gallons/year using 12-month Rolling Sum , of fuel oil used in the units listed in GP 003. This is a combined limit of numbers 6, 5, 4, and 2 fuel oil, and jet fuel.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
All boilers combusting fuel oil at the Facility are subject to this limit, except any Insignificant Activities listed in Appendix D. If the Permittee replaces any boilers, adds new boilers, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP003. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. However, when calculating the emissions increase, only the hourly emissions increase (calculated per Minn. R. 7007.1200, subp. 3) shall be calculated. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Sulfur Content of Fuel: less than or equal to 1.5 percent by weight	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
RECORDKEEPING REQUIREMENTS	hdr
Fuel Supplier Certification: Obtain and maintain a fuel supplier certification for each shipment of fuel oil, certifying that the sulfur content does not exceed 1.5% by weight.	Minn. R. 7007.0800, subps. 4 & 5
Recordkeeping: Record the type and quantity of liquid fuel combusted in each of the units listed in GP 003 each month until the facility use equals 950,000 gallons of liquid fuel during a 12-month rolling period. At this point, the Permittee shall immediately begin keeping daily records of liquid fuel use. Recordkeeping requirement will revert to a monthly basis if the 12-month rolling sum of liquid fuel combusted returns to below 950,000 gallons for 3 consecutive 12-month rolling periods.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Monthly Recordkeeping: By the last day of each month, calculate and record the total quantity of fuel oil combusted during the previous month, and the 12-month rolling sum of fuel oil combusted during the previous 12 months.	Minn. R. 7007.0800, subps. 4 & 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 004 Boilers/Heaters**

**Associated Items:** EU 042 Bldg B Boiler 2  
 EU 043 Bldg B Boiler 3  
 EU 056 Bldg C Boiler 1  
 EU 057 Bldg C Boiler 2  
 EU 064 Bldg C Boiler 3  
 EU 065 Bldg C Boiler 4  
 EU 067 C Tower Boiler 1  
 EU 068 C Tower Boiler 2  
 EU 069 C Tower Boiler 3  
 EU 072 Building F Boiler 1  
 EU 073 Building F Boiler 2  
 EU 090 Building B Hangar 8 Heater  
 EU 091 Building B Hangar 8 Heater  
 EU 092 Building B Hangar 7 Heater  
 EU 093 Building B Hangar 7 Heater  
 EU 097 Misc. Boilers/Heaters

What to do	Why to do it
RECORDKEEPING REQUIREMENTS	hdr
<p>By the last day of each month, calculate and record the following:</p> <ol style="list-style-type: none"> <li>1. The total quantity of natural gas combusted in boilers and heaters during the previous month (cubic feet)</li> <li>2. The total quantity of No. 6 fuel oil combusted in boilers and heaters during the previous month (gallons)</li> <li>3. The total quantity of No. 5 fuel oil combusted in boilers and heaters during the previous month (gallons)</li> <li>4. The total quantity of No. 4 fuel oil combusted in boilers and heaters during the previous month (gallons)</li> <li>5. The total quantity of No. 2 fuel oil, which may be combined with jet fuel, combusted in boilers and heaters during the previous month (gallons)</li> </ol> <p>All fuels used in all emissions unit listed above and/or included in or added to EU097 as allowed by this permit shall be included in this calculation.</p>	Minn. R. 7007.0800, subp. 4 & 5
The use of billing statements is acceptable to record the amount of natural gas combusted. If the billing statement does not cover a calendar month period, the Permittee shall assign the natural gas use contained on the billing statement to the calendar month corresponding to the billing statement date (i.e., a billing statement dated 6/15/05 would be applied to the June 2005 natural gas combustion records).	continued from above
By the last day of each month, calculate and record the total NOX emissions (N(bh)) from any boilers and heaters that were operated during the previous month, using equation B.1 of Appendix B of this permit. This number is then used in the calculations required under GP002 of this permit.	Minn. R. 7007.0800, subp. 4 & 5
By the last day of each month, calculate and record the total VOC emissions (V(bh)) from any boilers and heaters that were operated during the previous month, using equation B.4 of Appendix B of this permit. This number is then used in the calculations required under GP024 of this permit.	Minn. R. 7007.0800, subp. 4 & 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 005 Generators**

**Associated Items:** EU 054 Bldg C Diesel Generator

EU 055 Bldg C Diesel Generator

EU 066 C Tower Diesel Generator

EU 074 Building F Emergency Generator

EU 099 MISC. Generators

EU 102 Bldg F Diesel Generator 2

EU 103 Bldg F Diesel Generator 3

What to do	Why to do it
<b>EMISSION LIMITS</b>	hdr
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained. This limit applies to each unit listed or included above.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . This limit applies to each unit listed or included above. (This is equal to or greater than the maximum lb/million BTU heat input based on equipment design and fuel limitations.)	Minn. R. 7011.2300, subp. 2
<b>OPERATING CONDITIONS</b>	hdr
Fuel types allowed: Diesel fuel oil and natural gas, by equipment design	Minn. R. 7005.0100, subp. 35a
Hours of Operation: The Permittee shall maintain records of fuel use or hours of operation on site that document that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	Minn. R. 7007.0800, subp. 4 & 5
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
By the last day of each month, calculate and record the following:	Minn. R. 7007.0800, subp. 4 & 5
1. For natural gas combustion, the total quantity of natural gas combusted during the previous month for all generators located at the facility, in cubic feet	
2. For diesel fuel combustion,	
- the total actual power (output) generated by diesel fuel combustion during the previous month for all generators located at the facility, in hp-hr (Pd), OR	
- the total actual heat input using diesel fuel during the previous month for all generators located at the facility, in million Btu (Hd), OR	
- the estimated heat input using diesel fuel during the previous month for all generators located at the facility, in million Btu (He), calculated using the actual hours of operation of each unit times the maximum fuel combustion rate shown for the unit in Appendix E (if the unit is not listed in Appendix E, use the fuel combustion rate obtained from the operating manual or manufacturer specifications of the unit), OR	continued from above
-the estimated power (output) generated by diesel fuel combustion during the previous month for all generators located at the facility, in hp-hr (Pe), calculated using the actual hours of operation times the nameplate hp rating of the generator engine.	
The heat inputs and/or power outputs of all emissions units listed above and/or included in or added to EU099 as allowed by this permit must be included in these calculations.	
By the last day of each month, calculate and record the total NOX emissions (N(g)) from any generators that were operated during the previous month, using either equation B.2 or B.3 in Appendix B of this permit. This number is then used in the calculations required under GP002 of this permit.	Minn. R. 7007.0800, subp. 4 & 5
By the last day of each month, calculate and record the total VOC emissions (V(g)) from any generators that were operated during the previous month, using either equation B.5 or B.6 in Appendix B of this permit. This number is then used in the calculations required under GP024 of this permit.	Minn. R. 7007.0800, subp. 4 & 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 006 Test Cells****Associated Items:** EU 044 Bldg B JT-9 Test Cell

EU 045 Bldg B APU Test Cell

EU 046 Bldg B APU Test Cell

EU 047 Bldg B JT-8 Test Cell

EU 100 Misc. Test Cells

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity . This limit applies individually to each unit listed or included above.	Minn. R. 7011.0110
RECORDKEEPING REQUIREMENTS	hdr
<p>By the last day of each month, calculate and record the total NOX emissions from engine and APU testing operations for the previous month, in tons, using the equation below. This number is then used in the calculations required under GP002 of this permit.</p> $N(et) = N1 + N2 + N3 + \dots + Nn$ <p>N(et) = the total NOx emissions from engine and APU testing operations for the previous month (tons)</p> <p>Nn = the total NOx emissions from each unit, calculated by multiplying the total fuel combusted (gallons) in each unit of this group times the most current AP-42/FIRE NOx emission factor for SCC 20400101. At the time of permit issuance, this factor is 0.0146 pounds per gallon of fuel.</p> <p>This calculation shall include emissions from all test cells listed above and/or included in or added to EU100 as allowed by this permit.</p>	Minn. R. 7007.0800, subp. 4 & 5
<p>By the last day of each month, calculate and record the total VOC emissions from engine and APU testing operations for the previous month, in tons, using the equation below. This number is then used in the calculations required under GP024 of this permit.</p> $V(et) = V1 + V2 + V3 + \dots + Vn$ <p>V(et) = the total VOC emissions from engine and APU testing operations for the previous month (tons)</p> <p>Vn = the total VOC emissions from each unit, calculated by multiplying the total fuel combusted (gallons) in each unit of this group times the most current AP-42/FIRE VOC emission factor for SCC 20400101. At the time of permit issuance, this factor is 0.046 pounds per gallon of fuel.</p> <p>This calculation shall include emissions from all test cells listed above and/or included in or added to EU100 as allowed by this permit.</p>	Minn. R. 7007.0800, subp. 4 & 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-12**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 007 Existing Painting Operations subject to Aerospace Manufacturing & Rework NESHA****Associated Items:** EU 063 Bldg C Composite Shop Spray Booth

EU 070 C Tower Bay 5 Trench Vent

EU 071 C Tower Bay 6 Trench Vent

EU 098 Misc. Painting Operations/VOC Sources

What to do	Why to do it
OPERATING REQUIREMENTS	hdr
The Permittee shall conduct the handling and transfer of primers and topcoats to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.	40 CFR 63.745(b); Minn. R. 7011.7320
HAP and VOC content limits. For each primer or topcoat application operation that is uncontrolled (no control device is used to reduce organic HAP emissions from the operation), the Permittee shall use primers and topcoats (including self-priming topcoats) with HAP and VOC content levels equal to or less than the limits specified in items (1) through (4). Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from the requirements of this standard.	40 CFR 63.745(a); Minn. R. 7011.7320
(1) Organic HAP emissions from primers shall be limited to an organic HAP content level of no more than: - 540 g/L (4.5 lb/gal) of primer (less water), as applied, for general aviation rework facilities; - or 650 g/L (5.4 lb/gal) of exterior primer (less water), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft; - or 350 g/L (2.9 lb/gal) of primer (less water), as applied.	40 CFR Section 63.745(c)(1); 40 CFR Section 63.749(d)(3); 40 CFR Section 63.745(e); Minn. R. 7011.7320
(2) VOC emissions from primers shall be limited to a VOC content level of no more than: - 540 g/L (4.5 lb/gal) of primer (less water and exempt solvents), as applied, for general aviation rework facilities; - or 650 g/L (5.4 lb/gal) of exterior primer (less water and exempt solvents), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft; - or 350 g/L (2.9 lb/gal) of primer (less water and exempt solvents), as applied.	40 CFR Section 63.745(c)(2); 40 CFR Section 63.749(d)(3); 40 CFR Section 63.745(e); Minn. R. 7011.7320
(3) Organic HAP emissions from topcoats shall be limited to an organic HAP content level of no more than: - 420 g/L (3.5 lb/gal) of coating (less water) as applied - or 540 g/L (4.5 lb/gal) of coating (less water) as applied for general aviation rework facilities.  Organic HAP emissions from self-priming topcoats shall be limited to an organic HAP content level of no more than: - 420 g/L (3.5 lb/gal) of self-priming topcoat (less water) as applied or - 540 g/L (4.5 lb/gal) of self-priming topcoat (less water) as applied for general aviation rework facilities	40 CFR Section 63.745(c)(3); 40 CFR Section 63.749(d)(4); 40 CFR Section 63.745(e); Minn. R. 7011.7320
(4) VOC emissions from topcoats shall be limited to a VOC content level of no more than: - 420 g/L (3.5 lb/gal) of coating (less water and exempt solvents) as applied - or 540 g/L (4.5 lb/gal) of coating (less water and exempt solvents) as applied for general aviation rework facilities.  VOC emissions from self-priming topcoats shall be limited to a VOC content level of no more than: - 420 g/L (3.5 lb/gal) of self-priming topcoat (less water and exempt solvents) as applied - or 540 g/L (4.5 lb/gal) of self-priming topcoat (less water) as applied for general aviation rework facilities	40 CFR Section 63.745(c)(4); 40 CFR Section 63.749(d)(4); 40 CFR Section 63.745(e); Minn. R. 7011.7320
Except as provided in 40 CFR Section 63.745(f)(3), All primers and topcoats (including self-priming topcoats) shall be applied using one or more of the following application techniques: - Dip coat application; - Roll coating; - Brush coating; - Cotton-tipped swab application; - High volume low pressure (HVLP) spraying	40 CFR Section 63.745(f)(1); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-13**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

All application devices used to apply primers or topcoats (including self-priming topcoats) shall be operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times. Equipment modified by the Permittee shall maintain a transfer efficiency equivalent to HVLP and electrostatic spray application techniques.	40 CFR Section 63.745(f)(2); Minn. R. 7011.7320
<p>The following situations are exempt from the requirements of 40 CFR Section 63.745(f)(1):</p> <p>(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;</p> <p>(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in item 1 above;</p> <p>(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in item 1 above;</p> <p>(iv) The use of airbrush application methods for stenciling, lettering, and other identification markings;</p> <p>(v) The use of hand-held spray can application methods; and</p> <p>(vi) Touch-up and repair operations.</p>	40 CFR Section 63.745(f)(2); Minn. R. 7011.7320
For existing primer or topcoat application operations, if the Permittee constructs or reconstructs a spray booth, the Permittee must comply with the new source requirements for inorganic HAP specified in 40 CFR Section 63.745(g)(2)(ii) and 40 CFR Section 63.746(b)(4) for that new spray booth upon startup.	40 CFR Section 63.749(a)(2); Minn. R. 7011.7320
CONTROL REQUIREMENTS (see also GP023)	hdr
<p>Except for the following exclusions, the Permittee must comply with 40 CFR Section 63.745(g)(1)-(3) for each primer or topcoat application operation in which any of the coatings that are spray applied contain inorganic HAP.</p> <p>Exclusions:</p> <ul style="list-style-type: none"> <li>- Touch-up of scratched surfaces or damaged paint;</li> <li>- Hole daubing for fasteners;</li> <li>- Touch-up of trimmed edges;</li> <li>- Coating prior to joining dissimilar metal components;</li> <li>- Stencil operations performed by brush or air brush;</li> <li>- Section joining;</li> <li>- Touch-up of bushings and other similar parts;</li> <li>- Sealant detackifying;</li> <li>- Painting parts in an area identified in a title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth; and</li> <li>- The use of hand-held spray can application methods.</li> </ul>	40 CFR Section 63.745(g); 40 CFR Section 63.749(e); Minn. R. 7011.7320
Apply coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated and exhausted through one or more outlets.	40 CFR Section 63.745(g)(1); 40 CFR Section 63.749(e); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-14**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

<p>Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in 40 CFR Section 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 below, or an air pollution control system that meets or exceeds the efficiency data points in Tables 1 and 2 below and is approved by the permitting authority.</p> <p>Table 1. -- Two-Stage Arrestor; Liquid Phase Challenge for Existing Sources</p> <table> <tr> <th>Filtration efficiency requirement, %</th><th>Aerodynamic particle size range, um</th></tr> <tr> <td>&gt; 90</td><td>&gt; 5.7</td></tr> <tr> <td>&gt; 50</td><td>&gt; 4.1</td></tr> <tr> <td>&gt; 10</td><td>&gt; 2.2</td></tr> </table> <p>Table 2. -- Two-Stage Arrestor; Solid Phase Challenge for Existing Sources</p> <table> <tr> <th>Filtration efficiency requirement, %</th><th>Aerodynamic particle size range, um</th></tr> <tr> <td>&gt; 90</td><td>&gt; 8.1</td></tr> <tr> <td>&gt; 50</td><td>&gt; 5.0</td></tr> <tr> <td>&gt; 10</td><td>&gt; 2.6</td></tr> </table>	Filtration efficiency requirement, %	Aerodynamic particle size range, um	> 90	> 5.7	> 50	> 4.1	> 10	> 2.2	Filtration efficiency requirement, %	Aerodynamic particle size range, um	> 90	> 8.1	> 50	> 5.0	> 10	> 2.6	40 CFR Section 63.745(g)(2)(i); 40 CFR Section 63.749(e); Minn. R. 7011.7320
Filtration efficiency requirement, %	Aerodynamic particle size range, um																
> 90	> 5.7																
> 50	> 4.1																
> 10	> 2.2																
Filtration efficiency requirement, %	Aerodynamic particle size range, um																
> 90	> 8.1																
> 50	> 5.0																
> 10	> 2.6																
TESTING/COMPLIANCE REQUIREMENTS	hdr																
For uncontrolled coatings that are not averaged, each 24 hours is considered a performance test.	40 CFR Section 63.749(d)(1); Minn. R. 7011.7320																
For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.	40 CFR Section 63.750(c)(1); Minn. R. 7011.7320																
For each coating formulation as applied, determine the organic HAP weight fraction, water weight fraction (if applicable), and density from manufacturer's data. If these values cannot be determined using the manufacturer's data, the Permittee shall submit an alternative procedure for determining their values for approval by the Administrator. Recalculation is required only when a change occurs in the coating formulation.	40 CFR Section 63.750(c)(2); Minn. R. 7011.7320																
For each coating as applied, calculate the mass of organic HAP emitted per volume of coating (lb/gal) less water as applied using Equations C.2, C.3, and C.4, found in Appendix C of this permit.	40 CFR Section 63.750(c)(3); Minn. R. 7011.7320																
For those uncontrolled primers and topcoats complying with the primer and topcoat VOC content levels specified in 40 CFR Section 63.745(c) without being averaged, the following procedure shall be used to determine the mass of VOC emitted per volume of coating (less water and exempt solvents) as applied.	40 CFR Section 63.750(e); Minn. R. 7011.7320																
Determine the VOC content of each formulation (less water and exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.	40 CFR Section 63.750(e)(1); Minn. R. 7011.7320																
For each coating applied, calculate the mass of VOC emitted per volume of coating (lb/gal) (less water and exempt solvents) as applied using Equations C.5, C.6, and C.7, found in Appendix C of this permit.	40 CFR Section 63.750(e)(2); Minn. R. 7011.7320																
If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G(a), compliance shall be based, except as provided in 40 CFR Section 63.750(e)(3)(ii) [below], upon the VOC content obtained using EPA Method 24.	40 CFR Section 63.750(e)(3)(i); Minn. R. 7011.7320																
If the VOC content of a coating obtained using Method 24 would indicate noncompliance as determined under either 40 CFR Section 63.749(d)(3)(i) or 40 CFR Section 63.749(d)(4)(i), the Permittee may elect to average the coating with other uncontrolled coatings and (re)calculate G(i) (using the procedure specified in 40 CFR Section 63.750(f), provided appropriate and sufficient records were maintained for all coatings included in the average (re)calculation. The (re)calculated value of G(i) (G(a) in 40 CFR Section 63.750(f) for the averaged coatings shall then be used to determine compliance.	40 CFR Section 63.750(e)(3)(ii); Minn. R. 7011.7320																
If the Permittee seeks to use an alternative application method (as allowed in 40 CFR Section 63.745(f)(1)(ix)) in complying with the standards for primers and topcoats, the Permittee shall use the procedures specified in 40 CFR Section 63.750(i)(2)(i) and (i)(2)(ii) or (i)(2)(iii) to determine the organic HAP and VOC emission levels of the alternative application technique as compared to either HVLP or electrostatic spray application method.	40 CFR Section 63.750(i)(1); Minn. R. 7011.7320																

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-15**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

For the process or processes for which the alternative application method is to be used, the total organic HAP and VOC emissions shall be determined for an initial 30-day period, the period of time required to apply coating to five completely assembled aircraft, or a time period approved by the permitting agency. During this initial period, only HVLP or electrostatic spray application methods shall be used. The emissions shall be determined based on the volumes, organic HAP contents (less water), and VOC contents (less water and exempt solvents) of the coatings as applied.	40 CFR Section 63.750(i)(2)(i); Minn. R. 7011.7320
Upon implementation of the alternative application method, use the alternative application method in production on actual production parts or assemblies for a period of time sufficient to coat an equivalent amount of parts and assemblies with coatings identical to those used in the initial 30-day period. The actual organic HAP and VOC emissions shall be calculated for this post-implementation period.	40 CFR Section 63.750(i)(2)(ii); Minn. R. 7011.7320
Test the proposed application method against either HVLP or electrostatic spray application methods in a laboratory or pilot production area, using parts and coatings representative of the process(es) where the alternative method is to be used. The laboratory test will use the same part configuration(s) and the same number of parts for both the proposed method and the HVLP or electrostatic spray application methods.	40 CFR Section 63.750(i)(2)(iii); Minn. R. 7011.7320
Whenever the approach in either 40 CFR Section 63.750(i)(2)(ii) or (i)(2)(iii) is used, the Permittee shall calculate both the organic HAP and VOC emission reduction using Equation C.8, found in Appendix C of this permit.	40 CFR Section 63.750(i)(2)(iv); Minn. R. 7011.7320
<p>If the Permittee seeks to demonstrate that an alternative application method achieves emission reductions equivalent to HVLP or electrostatic spray application methods, the Permittee shall comply with the following:</p> <p>(i) Each coating shall be applied such that the dried film thickness is within the range specified by the applicable specification(s) for the aerospace vehicle or component being coated.</p> <p>(ii) If no such dried film thickness specification(s) exists, the Permittee shall ensure that the dried film thickness applied during the initial 30-day period is equivalent to the dried film thickness applied during the alternative application method test period for similar aerospace vehicles or components.</p> <p>(iii) Failure to comply with these dried film thickness requirements shall invalidate the test results obtained under 40 CFR Section 63.750(i)(2)(i).</p>	40 CFR Section 63.750(i)(3); Minn. R. 7011.7320
Dry particulate filters used to comply with 40 CFR 63.745(g)(2) must be certified by the filter manufacturer or distributor, paint booth supplier, and/or the Permittee using method 319 in appendix A of 40 CFR pt. 63, subp. A, to meet or exceed the efficiency data points found in Tables 1 and 2 of GP 007.	40 CFR Section 63.750(o); Minn. R. 7011.7320
<b>MONITORING REQUIREMENTS</b>	hdr
<p>Reduction of monitoring data</p> <p>(1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O<sub>2</sub>) or nanograms per Joule (ng/J) of pollutant).</p> <p>(2) All emission data shall be converted into the same units as the emission limits for reporting purposes. After conversion into these units, the data may be rounded to the same number of significant digits as used in the emission limits to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).</p>	40 CFR Section 63.751(f); Minn. R. 7011.7320
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
If the Permittee is required to comply with the organic HAP and VOC content limits specified in 40 CFR Section 63.745(c), the Permittee shall record the name and VOC content as received and as applied of each primer and topcoat used at the facility	40 CFR Section 63.752(c)(1); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-16**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

For uncontrolled primers and topcoats that meet, without averaging, the organic HAP and VOC content limits in 40 CFR Section 63.745(c)(1) through (c)(4), the Permittee shall record the following:  (i) The mass of organic HAP emitted per unit volume of coating as applied (less water) (H(i)) and the mass of VOC emitted per unit volume of coating as applied (less water and exempt solvents) (G(i)) for each coating formulation within each coating category used each month (as calculated using the procedures specified in 40 CFR Section 63.750(c) and 40 CFR Section 63.750(e));  (ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of H(i) and G(i); and  (iii) The volume (gal) of each coating formulation within each coating category used each month.	40 CFR Section 63.752(c)(2); Minn. R. 7011.7320
For "low HAP content" uncontrolled primers with organic HAP content less than or equal to 250 g/l (2.1 lb/gal) less water as applied and VOC content less than or equal to 250 g/l (2.1 lb/gal) less water and exempt solvents as applied, the Permittee shall record the following:  (i) Annual purchase records of the total volume of each primer purchased; and  (ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the organic HAP and VOC content as applied. These records shall consist of the manufacturer's certification when the primer is applied as received, or the data and calculations used to determine H(i) if not applied as received.	40 CFR Section 63.752(c)(3); Minn. R. 7011.7320
<b>REPORTING REQUIREMENTS</b>	hdr
For each primer or topcoat application operation subject to requirements of GP007, the Permittee shall submit Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:  - For primers and topcoats where compliance is not being achieved through the use of averaging or a control device, each value of H(i) and G(i), as recorded under 40 CFR Section 63.752(c)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in 40 CFR Section 63.745(c) [E.01];  - All times when a primer or topcoat application operation was not immediately shut down when the pressure drop across a dry particulate filter or HEPA filter system was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures;  - If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards	40 CFR Section 63.753(c)(1); Minn. R. 7011.7320
For each primer or topcoat application operation subject to requirements of GP007, the Permittee shall submit Annual reports beginning 12 months after the date of the notification of compliance status listing the number of times the pressure drop for each dry filter was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.	40 CFR Section 63.753(c)(2); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-17**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 008 Handwipe Cleaning Operations subject to Aerospace Manufacturing and Rework NESHAP**

**Associated Items:** EU 048 Bldg C Avionics Shop Degreasing Booth

EU 049 Bldg C Electric Shop Degreasing Booth 1

EU 061 Bldg C Cleaning Shop Degreasing

EU 063 Bldg C Composite Shop Spray Booth

EU 070 C Tower Bay 5 Trench Vent

EU 071 C Tower Bay 6 Trench Vent

EU 082 Bldg C Electric Shop Degreasing Booth 2

EU 098 Misc. Painting Operations/VOC Sources

What to do	Why to do it
CLEANING OPERATION STANDARDS	hdr
<p>The owner or operator shall comply with these requirements unless:</p> <ul style="list-style-type: none"> <li>- the cleaning solvent used contains HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>- the cleaning solvent is one of the approved cleaning solvents listed below</li> </ul>	40 CFR Section 63.744(a); 40 CFR Section 63.741(f); Minn. R. 7011.7320
<p>Approved Cleaning Solvents:</p> <p>Aqueous - Cleaning solvents in which water is the primary ingredient (&gt; or = 80% of the solution as applied). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point &gt; 200 degrees F, as reported by the manufacturer, and the solution must be miscible with water.</p> <p>Hydrocarbon based - Cleaners composed of photochemically reactive hydrocarbons and/or oxygenated hydrocarbons and have a maximum vapor pressure of 3.75 inches water at 68 degrees F. These cleaners may contain no HAPs.</p>	40 CFR Section 63.744 Table 1; Minn. R. 7011.7320
<p>1) Place cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers upon completing their use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.</p> <p>2) Store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, in closed containers.</p> <p>3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents in such a manner that minimizes spills.</p>	40 CFR Section 63.744(a)(1)-(3); Minn. R. 7011.7320
<p>Use cleaning solvents that meet one of the requirements specified in (1), (2), and (3) below.</p> <p>(1) Be one of the Approved Cleaning Solvents listed above; or</p> <p>(2) Have a composite vapor pressure of 45 mm Hg (24.1 inches H<sub>2</sub>O) or less at 68 degrees F; or</p> <p>(3) Demonstrate that the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60% from a baseline adjusted for production. The baseline shall be established as part of an approved alternative plan administered by the State. The baseline shall be calculated using data from 1996 and 1997, or as otherwise agreed upon by the Administrator or delegated State Authority. The baseline shall be approved by the MPCA.</p>	40 CFR Section 63.744(b); 40 CFR Section 63.749(c)(1); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-18**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

<p>The following cleaning operations are exempt from the requirements of items (1) through (3) above:</p> <ul style="list-style-type: none"> <li>- Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;</li> <li>- Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);</li> <li>- Cleaning and surface activation prior to adhesive bonding;</li> <li>- Cleaning of electronic parts and assemblies containing electronic parts;</li> <li>- Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;</li> <li>- Cleaning of fuel cells, fuel tanks, and confined spaces;</li> <li>- Surface cleaning of solar cells, coated optics, and thermal control surfaces;</li> </ul>	40 CFR Section 63.744(e); Minn. R. 7011.7320
<ul style="list-style-type: none"> <li>- Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;</li> <li>- Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;</li> <li>- Cleaning of aircraft transparencies, polycarbonate, or glass substrates;</li> <li>- Cleaning and cleaning solvent usage associated with research and development, quality control, and laboratory testing;</li> <li>- Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and</li> </ul>	(continued from above)
<ul style="list-style-type: none"> <li>- Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.</li> </ul>	(continued from above)
<b>TESTING/COMPLIANCE REQUIREMENTS</b>	hdr
<p>Each cleaning operation subject to the requirements of this Group shall be considered in noncompliance if the Permittee fails to institute and carry out the housekeeping measures required under 40 CFR Section 63.744(a).</p> <p>Exemption for incidental emissions. Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this permit condition.</p>	40 CFR Section 63.749(c); Minn. R. 7011.7320
<p>Compliance with the hand-wipe cleaning solvent approved composition list specified in 40 CFR Section 63.744(b)(1) for hand-wipe cleaning solvents shall be demonstrated using data supplied by the manufacturer of the cleaning solvent. The data shall identify all components of the cleaning solvent and shall demonstrate that one of the approved composition definitions is met.</p>	40 CFR Section 63.750(a); Minn. R. 7011.7320
<p>The composite vapor pressure of hand-wipe cleaning solvents used in a cleaning operation subject to requirements of this Group shall be determined as follows:</p> <p>(1) For single-component hand-wipe cleaning solvents, the vapor pressure shall be determined using MSDS or other manufacturer's data, standard engineering reference texts, or other equivalent methods</p> <p>(2) The composite vapor pressure of a blended hand-wipe solvent shall be determined by quantifying the amount of each organic compound in the blend using MSDS or other manufacturer's data or a gas chromatographic analysis in accordance with ASTM E 260-91 or 96 and by calculating the composite vapor pressure of the solvent by summing the partial pressures of each component (use Equation C.1 in Appendix C). The vapor pressure of each component shall be determined using manufacturer's data, standard engineering reference texts, or other equivalent methods.</p>	40 CFR Section 63.750(b); Minn. R. 7011.7320
<b>MONITORING REQUIREMENTS</b>	hdr
<p>Reduction of monitoring data</p> <p>(1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O<sub>2</sub>) or nanograms per Joule (ng/J) of pollutant).</p> <p>(2) All emission data shall be converted into the same units as the emission limits for reporting purposes. After conversion into these units, the data may be rounded to the same number of significant digits as used in the emission limits to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).</p>	40 CFR Section 63.751(f); Minn. R. 7011.7320
<b>RECORDKEEPING REQUIREMENTS</b>	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-19**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

The Permittee shall record the name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.	40 CFR Section 63.752(b)(1); Minn. R. 7011.7320
For each cleaning solvent used in hand-wipe cleaning operations that complies with the composition requirements for "An Aqueous Solvent" or "A Hydrocarbon-based Solvent" (see DEFINITIONS) or for semi-aqueous cleaning solvents used for flush cleaning operations, the Permittee shall record:  (i) The name of each cleaning solvent used;  (ii) All data and calculations that demonstrate that the cleaning solvent complies with one of the composition requirements; and  (iii) Annual records of the volume of each solvent used, as determined from facility purchase records or usage records.	40 CFR Section 63.752(b)(2); Minn. R. 7011.7320
For each cleaning solvent used in hand-wipe cleaning operations that does not comply with one of the composition requirements for "An Aqueous Solvent" or "A Hydrocarbon-based Solvent", but does have a composite vapor pressure of 45 mm Hg (24.1 in. H(2)O) or less at 20 degrees C (68 degrees F), the Permittee shall record:  (i) The name of each cleaning solvent used;  (ii) The composite vapor pressure of each cleaning solvent used;  (iii) All vapor pressure test results, if appropriate, data, and calculations used to determine the composite vapor pressure of each cleaning solvent; and  (iv) The amount (in gallons) of each cleaning solvent used each month at each operation.	40 CFR Section 63.752(b)(3); Minn. R. 7011.7320
For each cleaning solvent used for the exempt hand-wipe cleaning operations specified in 40 CFR Section 63.744(e) that does not conform to the vapor pressure or composition requirements of 40 CFR Section 63.744(b), the Permittee shall record:  (i) The identity and amount (in gallons) of each cleaning solvent used each month at each operation; and  (ii) A list of the processes set forth in 40 CFR Section 63.744(e) to which the cleaning operation applies.	40 CFR Section 63.752(b)(4); Minn. R. 7011.7320
REPORTING REQUIREMENTS	hdr
For cleaning operations subject to the requirements of GP008, the Permittee shall submit semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:  - Any instance where a noncompliant cleaning solvent is used for a non-exempt hand-wipe cleaning operation;  - A list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 months and, as appropriate, their composite vapor pressure or notification that they comply with one of the composition requirements for "An Aqueous Solvent" or "A Hydrocarbon-based Solvent";  - If the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards.	40 CFR Section 63.753(b); Minn. R. 7011.7320



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-20**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 010 Flush Cleaning Operations subject to Aerospace Manufacturing & Rework NESHAP****Associated Items:** EU 048 Bldg C Avionics Shop Degreasing Booth

EU 049 Bldg C Electric Shop Degreasing Booth 1

EU 061 Bldg C Cleaning Shop Degreasing

EU 082 Bldg C Electric Shop Degreasing Booth 2

What to do	Why to do it
CLEANING OPERATION STANDARDS	hdr
<p>The owner or operator shall comply with these requirements unless:</p> <ul style="list-style-type: none"> <li>- the cleaning solvent used contains HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>- the cleaning solvent is one of the approved cleaning solvents listed below</li> </ul>	40 CFR Section 63.744(a); 40 CFR Section 63.741(f); Minn. R. 7011.7320
<p>Approved Cleaning Solvents:</p> <p>Aqueous - Cleaning solvents in which water is the primary ingredient (&gt; or = 80% of the solution as applied). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point &gt; 200 degrees F, as reported by the manufacturer, and the solution must be miscible with water.</p> <p>Hydrocarbon based - Cleaners composed of photochemically reactive hydrocarbons and/or oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 degrees C (3.75 inches H2O at 68 degrees F). These cleaners may contain no HAPs.</p>	40 CFR Section 63.744 Table 1; Minn. R. 7011.7320
<p>1) Place cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers upon completing their use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.</p> <p>2) Store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, in closed containers.</p> <p>3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents in such a manner that minimizes spills.</p>	40 CFR Section 63.744(a)(1)-(3); Minn. R. 7011.7320
<p>Flush cleaning - For each flush cleaning operation (excluding those in which An Aqueous Solvent, A Hydrocarbon-based Solvent, or semi-aqueous cleaning solvents are used) the Permittee shall empty the used cleaning solvent each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.</p>	40 CFR Section 63.744(d); Minn. R. 7011.7320
<p>Each cleaning operation subject to the requirements of this Group shall be considered in noncompliance if the Permittee fails to institute and carry out the housekeeping measures required under 40 CFR Section 63.744(a).</p> <p>Exemption for incidental emissions. Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this permit condition.</p>	40 CFR Section 63.749(c); Minn. R. 7011.7320
<p>An affected flush cleaning operation shall be considered in compliance if the operating requirements specified in 40 CFR Section 63.744(d)[Flush cleaning] are implemented and carried out.</p>	40 CFR Section 63.749(c)(3); Minn. R. 7011.7320
MONITORING REQUIREMENTS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-21**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

Reduction of monitoring data  (1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and percent O <sub>2</sub> ) or nanograms per Joule (ng/J) of pollutant).  (2) All emission data shall be converted into the same units as the emission limits for reporting purposes. After conversion into these units, the data may be rounded to the same number of significant digits as used in the emission limits to specify the emission limit (e.g., rounded to the nearest 1 percent overall reduction efficiency).	40 CFR Section 63.751(f); Minn. R. 7011.7320
RECORDKEEPING REQUIREMENTS	hdr
The Permittee shall record the name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.	40 CFR Section 63.752(b)(1); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-22

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** GP 011 Depainting Operations subject to Aerospace Manufacturing & Rework NESHAP**Associated Items:** EU 070 C Tower Bay 5 Trench Vent

EU 071 C Tower Bay 6 Trench Vent

EU 098 Misc. Painting Operations/VOC Sources

What to do	Why to do it
DEPAINTING OPERATION STANDARDS	hdr
<p>For each depainting operation, the Permittee shall comply with the requirements in items (1) through (3) below.</p> <p>Exemption for low throughput - If the Permittee depaints six or less completed aerospace vehicles in a calendar year, the Permittee is not subject to the depainting requirements.</p> <p>(1) These requirements apply to the depainting of the outer surface areas of completed aerospace vehicles, including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft, and the outer casing and stabilizers of missiles and rockets. These requirements do not apply to the depainting of parts or units normally removed from the aerospace vehicle for depainting. However, depainting of wings and stabilizers is always subject to the requirements regardless of whether their removal is considered by the owner or operator to be normal practice for depainting.</p>	40 CFR Section 63.746(a); Minn. R. 7011.7320
<p>(2) Aerospace vehicles or components that are intended for public display, no longer operational, and not easily capable of being moved are exempt from these depainting requirements.</p> <p>(3) The following depainting operations are exempt from the depainting requirements:</p> <p>(i) Depainting of radomes; and</p> <p>(ii) Depainting of parts, subassemblies, and assemblies normally removed from the primary aircraft structure before depainting.</p>	(continued from above)
<p>For each depainting operation subject to the requirements of this Group, the Permittee shall comply with the following:</p> <p>(1) Except as provided in (2) and (3), each depainting operation subject to the requirements of this Group shall emit no organic HAP from chemical stripping formulations and agents or chemical paint softeners.</p> <p>(2) Where non-chemical based equipment is used to comply with Item 1 above, either in total or in part, the Permittee shall operate and maintain the equipment according to the manufacturer's specifications or locally prepared operating procedures.</p> <p>During periods of malfunctions of such equipment, the Permittee may use substitute materials during the repair period provided the substitute materials used are those available that minimize organic HAP emissions. In no event shall substitute materials be used for more than 15 days annually, unless such materials are organic HAP-free.</p>	40 CFR Section 63.746(b); 40 CFR Section 63.746(a) regarding subsection (b); Minn. R. 7011.7320
<p>(3) For each depainting operation, the Permittee shall not, on an annual average basis use:</p> <ul style="list-style-type: none"> <li>- more than 26 gallons of organic HAP-containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted; or</li> <li>- more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted for spot stripping and decal removal.</li> </ul> <p>(4) Except for mechanical and hand sanding operations, the Permittee shall not depaint using dry media blasting equipment for operations subject to the requirements of 40 CFR Section 63.746.</p>	40 CFR Section 63.746(b); 40 CFR Section 63.746(a); 40 CFR Section 63.749(f)(3)(A); 40 CFR Section 63.749(g); Minn. R. 7011.7320
<p>For existing depainting operations, if the Permittee constructs or reconstructs a hangar, the Permittee must comply with the new source requirements for inorganic HAP specified in 40 CFR Section 63.745(g)(2)(ii) and 40 CFR Section 63.746(b)(4) for that new hangar upon startup.</p>	40 CFR Section 63.749(a)(2); Minn. R. 7011.7320
TESTING/COMPLIANCE REQUIREMENTS	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-23**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

For uncontrolled organic emissions from depainting operations, each calendar year is considered a performance test period for determining compliance with the HAP limits for organic HAP-containing chemical strippers used for spot stripping and decal removal.	40 CFR Section 63.749(f)(1); Minn. R. 7011.7320
<p>If the Permittee seeks to comply with 40 CFR Section 63.746(b)(3), the Permittee shall determine the volume of organic HAP-containing chemical strippers or alternatively the weight of organic HAP used per aircraft using the following procedures:</p> <p>(1) For each chemical stripper used for spot stripping and decal removal, determine for each annual period the total volume as applied or the total weight of organic HAP using the procedure specified in 40 CFR Section 63.750(d)(2).</p> <p>(2) Determine the total number of aircraft for which depainting operations began during the annual period as determined from company records.</p> <p>(3) Calculate the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used for spot stripping and decal removal per aircraft using Equation C.9 or C.10, found in Appendix C of this permit.</p>	40 CFR Section 63.750(j); Minn. R. 7011.7320
Dry particulate filters used to comply with 40 CFR 63.745(g)(2) must be certified by the filter manufacturer or distributor, depainting booth supplier, and/or the Permittee using method 319 in appendix A of 40 CFR pt. 63, subp. A, to meet or exceed the efficiency data points found in Tables 1 and 2 of GP 007.	40 CFR Section 63.750(o); Minn. R. 7011.7320
<b>MONITORING REQUIREMENTS</b>	hdr
<p>Reduction of monitoring data</p> <p>(1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O<sub>2</sub>) or nanograms per Joule (ng/J) of pollutant).</p> <p>(2) All emission data shall be converted into the same units as the emission limits for reporting purposes. After conversion into these units, the data may be rounded to the same number of significant digits as used in the emission limits to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).</p>	40 CFR Section 63.751(f); Minn. R. 7011.7320
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
<p>For all chemical strippers used in the depainting operation, the Permittee shall record:</p> <p>(i) The name of each chemical stripper; and</p> <p>(ii) Monthly volumes of each organic HAP containing chemical stripper used or monthly weight of organic HAP-material used for spot stripping and decal removal.</p>	40 CFR Section 63.752(e)(1); Minn. R. 7011.7320
For each type of aircraft depainted at the facility, the Permittee shall maintain a listing of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting. Prototype, test model or aircraft that exist in low numbers (i.e., less than 25 aircraft of any one type) are exempt from this requirement.	40 CFR Section 63.752(e)(4); Minn. R. 7011.7320
For spot stripping and decal removal, the Permittee shall record the volume of organic HAP-containing chemical stripper or weight of organic HAP used, the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used per aircraft, the annual number of aircraft stripped, and all data and calculations used.	40 CFR Section 63.752(e)(6); Minn. R. 7011.7320
<b>REPORTING REQUIREMENTS</b>	hdr
<p>For each depainting operation subject to the requirements of GP 011, the Permittee shall submit Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:</p> <p>(i) Any 24-hour period where organic HAP were emitted from the depainting of aerospace vehicles, other than from the exempt operations listed in 40 CFR Section 63.746(a), 40 CFR Section 63.746(b)(3), and 40 CFR Section 63.746(b)(5).</p> <p>(ii) Any new chemical strippers used at the facility during the reporting period;</p> <p>(iii) The organic HAP content of these new chemical strippers;</p> <p>(iv) For each chemical stripper that undergoes reformulation, its organic HAP content;</p> <p>(v) Any new non-chemical depainting technique in use at the facility since the notification of compliance status or any subsequent semiannual report was filed;</p>	40 CFR Section 63.753(d)(1)(i)-(v); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-24**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

<p>For each depainting operation subject to the requirements of GP 011, the Permittee shall submit Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:</p> <p>(vi) For periods of malfunctions:</p> <p>(A) The non-chemical method or technique that malfunctioned;</p> <p>(B) The date that the malfunction occurred;</p> <p>(C) A description of the malfunction;</p> <p>(D) The methods used to repaint aerospace vehicles during the malfunction period;</p> <p>(E) The dates that these methods were begun and discontinued; and</p> <p>(F) The date that the malfunction was corrected;</p> <p>(vii) All periods where a nonchemical depainting operation subject to 40 CFR Section 63.746(b)(2) for the control of inorganic HAP emissions was not immediately shut down when the pressure drop or recommended parameter(s) was outside the limit(s) specified by the manufacturer or in locally prepared operational procedures;</p>	40 CFR Section 63.753(d)(1)(vi)-(vii); Minn. R. 7011.7320
<p>For each depainting operation subject to the requirements of GP 011, the Permittee shall submit Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:</p> <p>(viii) A list of new and discontinued aircraft models repainted at the facility over the last 6 months and a list of the parts normally removed for repainting for each new aircraft model being repainted; and</p> <p>(ix) If the depainting operation has been in compliance for the semiannual period, a statement signed by a responsible company official that the operation was in compliance with the applicable standards</p>	40 CFR Section 63.753(d)(1)(viii)-(ix); Minn. R. 7011.7320
<p>For each depainting operation subject to the requirements of GP 011, the Permittee shall submit Annual reports occurring every 12 months from the date of the notification of compliance status that identify:</p> <p>(i) The average volume per aircraft of organic HAP-containing chemical strippers or weight of organic HAP used for spot stripping and decal removal operations if it exceeds the limits specified in 40 CFR Section 63.746(b)(3); and</p> <p>(ii) The number of times the pressure drop limit(s) for each filter system were outside the limit(s) specified by the manufacturer or in locally prepared operating procedures.</p>	40 CFR Section 63.753(d)(2); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-25**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 013 Existing Boilers under Minn. Rules****Associated Items:** EU 042 Bldg B Boiler 2

EU 043 Bldg B Boiler 3

EU 056 Bldg C Boiler 1

EU 057 Bldg C Boiler 2

EU 072 Building F Boiler 1

EU 073 Building F Boiler 2

What to do	Why to do it
EMISSIONS/OPERATING LIMITS (see also GP 003)	hdr
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input . This limit applies individually to each unit listed in GP013. The maximum PTE of each unit, under worst case fuel allowed, is as follows: EU042 - 0.12 lb/MMBtu EU043 - 0.13 lb/MMBtu EU056 - 0.08 lb/MMBtu EU057 - 0.08 lb/MMBtu EU072 - 0.06 lb/MMBtu EU073 - 0.06 lb/MMBtu	Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 1.6 lbs/million Btu heat input . This limit applies individually to each unit listed in GP013. This limit is equal to the maximum lb/million BTU heat input based on equipment design and fuel limitations.	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies individually to each unit listed under GP013.	Minn. R. 7011.0510, subp. 2
Fuels allowed: EU 042, and EU 043 are limited to natural gas, no. 6 fuel oil, and no. 2 fuel oil, which may be combined with jet fuel. EU 056 and EU 057 are limited to natural gas, no. 5 fuel oil, and no. 2 fuel oil, which may be combined with jet fuel. EU 072 and EU 073 are limited to natural gas, no. 4 fuel oil, and no. 2 fuel oil, which may be combined with jet fuel.	Minn. R. 7005.0100, subp. 35a (used to calculate potential to emit)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-26**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 014 New Boilers under Minn. Rules****Associated Items:** EU 064 Bldg C Boiler 3

EU 065 Bldg C Boiler 4

EU 067 C Tower Boiler 1

EU 068 C Tower Boiler 2

EU 069 C Tower Boiler 3

What to do	Why to do it
EMISSIONS/OPERATING LIMITS (see also GP 003)	hdr
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input This limit applies individually to each unit listed under GP014. The maximum PTE of each unit, under worst case fuel allowed, is 0.08 lb/MMBtu.	Minn. R. 7011.0515, subp. 1
Sulfur Dioxide: less than or equal to 1.6 lbs/million Btu heat input . This limit applies individually to each unit listed in GP014. This limit is equal to the maximum lb/million BTU heat input based on equipment design and fuel limitations.	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2
Fuels allowed: limited to natural gas and no. 5 fuel oil, no. 4 fuel oil, and no. 2 fuel oil, which may be combined with jet fuel.	Minn. R. 7005.0100, subp. 35a

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-27**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 015 Degreasing Booths**

**Associated Items:** EU 025 Bldg B GSE Shop Degreasing Booth  
EU 048 Bldg C Avionics Shop Degreasing Booth  
EU 049 Bldg C Electric Shop Degreasing Booth 1  
EU 061 Bldg C Cleaning Shop Degreasing  
EU 082 Bldg C Electric Shop Degreasing Booth 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. (APPLIES TO UNITS IN SERVICE PRIOR TO 7/19/69.) The units listed in GP015 are not expected to emit particulate matter.	Minn. R. 7011.0710, subp. 1(A)
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. (APPLIES TO UNITS NOT IN SERVICE PRIOR TO 7/19/69.) The units listed in GP015 are not expected to emit particulate matter.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. (APPLIES TO UNITS IN SERVICE PRIOR TO 7/19/69)	Minn. R. 7011.0710, subp. 1(B)
Opacity: less than or equal to 20 percent opacity (APPLIES TO UNITS NOT IN SERVICE PRIOR TO 7/19/69)	Minn. R. 7011.0715, subp. 1(B)



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-28**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** GP 016 Blasting & Similar Particulate Sources**Associated Items:** CE 038 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 078 Building C Bay 5 Pylon Bead Blast

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Controlled PM (lb/hr)      Limit (lb/hr) EU078 - 0.00625              11.8	
Opacity: less than or equal to 20 percent opacity (APPLIES TO EACH UNIT LISTED IN GP016.)	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (see also GP019 and GP020)	hdr
The Permittee shall operate and maintain the control devices listed under GP016 at all times that any emission unit controlled by the device is in operation. The Permittee shall document periods of non-operation of the control equipment. See Subject Items GP019 and GP020 for additional control equipment operational requirements.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each fabric filter baghouse such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each fabric filter baghouse such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-29**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 017 Spray Booths/Coating Operations****Associated Items:** CE 044 Water Curtain - Use for Water Wash Paint Booths

CE 046 Fiberglass Filter w/o Cardboard Frame

EU 029 Bldg C Plasma Spray Booth

EU 062 Bldg B GSE Shop Spray Booth

EU 098 Misc. Painting Operations/VOC Sources

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. (APPLIES TO EACH UNIT LISTED IN GP017)	Minn. R. 7011.0715, subp. 1(A)
Controlled PM (lb/hr)      Limit (lb/hr) EU029 - 0.59                      10.6 EU062 - 0.26                      14.9	
Opacity: less than or equal to 20 percent opacity (APPLIES TO EACH UNIT LISTED IN GP017.)	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (see also GP021 and GP022)	hdr
The Permittee shall operate and maintain the control devices listed under GP017 at all times that any emission unit controlled by the device is in operation. The Permittee shall document periods of non-operation of the control equipment. See Subject Items GP021 and GP022 for additional control equipment operational requirements.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each paper or fiberglass filter such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 20 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each paper or fiberglass filter such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 20 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each water curtain such that it achieves an overall control efficiency for Particulate Matter < 10 micron: greater than or equal to 10 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain each water curtain such that it achieves an overall control efficiency for Total Particulate Matter: greater than or equal to 10 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-30**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** GP 018 Heaters**Associated Items:** EU 090 Building B Hangar 8 Heater

EU 091 Building B Hangar 8 Heater

EU 092 Building B Hangar 7 Heater

EU 093 Building B Hangar 7 Heater

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies individually to each unit included in GP018. Potential PM emissions at the design capacity and allowed fuel (natural gas) are as follows: EU090 - EU093: 0.06 lb/hr	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies individually to each unit included in GP018.	Minn. R. 7011.0610, subp. 1(A)(2)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-31**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** GP 019 Trench Vents**Associated Items:** EU 070 C Tower Bay 5 Trench Vent

EU 071 C Tower Bay 6 Trench Vent

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. The units listed in GP019 are not expected to emit particulate matter.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-32**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: GP 024 VOC Limit**

What to do	Why to do it
The VOC limit includes VOC emissions from all units included in GP001 (EU048, EU049, EU061, EU062, EU063, EU070, EU071, EU082, EU098), GP004 (EU042, EU043, EU056, EU057, EU064, EU065, EU067, EU068, EU069, EU070, EU072, EU073, EU090, EU091, EU092, EU093, EU097), GP005 (EU054, EU055, EU066, EU074, EU099, EU102, EU103), and GP006 (EU044, EU045, EU046, EU047, EU100).	hdr
Volatile Organic Compounds: less than or equal to 210 tons/year using 12-month Rolling Sum , to be calculated by the last day of each month for the previous 12-month period.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
All VOC-emitting equipment, operations, and activities at the Facility are subject to this limit, with the exception of the print shop and Insignificant Activities listed in Appendix D. If the Permittee replaces any existing VOC-emitting equipment, adds new VOC-emitting equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements of GP024. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to repeat VOC calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit.	Title I Condition: Limit to avoid classification as major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000
By the last day of each month, calculate and record the total VOC emissions, in tons, for the previous month, using the following equation:  $V(t) = V(sp) + V(bh) + V(g) + V(et)$  Where: V(t) = the total VOC emissions for the previous month (tons) V(sp) = the total VOC emissions from paint and solvent usage for the previous month (tons, calculated as shown under GP001) V(bh) = the total VOC emissions from boilers and heaters for the previous month (tons, calculated as shown under GP004) V(g) = the total VOC emissions from generators for the previous month (tons, calculated as shown under GP005) V(et) = the total VOC emissions from engine and APU testing operations for the previous month (tons, calculated as shown under GP006)	Minn. R. 7007.0800, subp. 4 & 5
By the last day of each month, calculate and record the 12-month rolling sum of total VOC emissions (V(t), as calculated above).	Title I Condition: Monitoring of limit taken to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-33**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** EU 063 Bldg C Composite Shop Spray Booth**Associated Items:** CE 051 2-Stage NESHAP Comp. Filter

GP 001 Paint &amp; Solvent Usage - VOC Calculations

GP 007 Existing Painting Operations subject to Aerospace Manufacturing &amp; Rework NESHAP

GP 008 Handwipe Cleaning Operations subject to Aerospace Manufacturing and Rework NESHAP

SV 057 Bldg C Composite Shop Spray Booth

What to do	Why to do it
CLEANING OPERATION STANDARDS	hdr
<p>The owner or operator shall comply with these requirements unless:</p> <p>- the cleaning solvent used contains HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from manufacturer's representations</p> <p>OR</p> <p>- the cleaning solvent is one of the approved cleaning solvents listed below</p>	40 CFR Section 63.744(a); 40 CFR Section 63.741(f); Minn. R. 7011.7320
<p>Approved Cleaning Solvents:</p> <p>Aqueous - Cleaning solvents in which water is the primary ingredient (&gt; or = 80% of the solution as applied). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point &gt; 200 degrees F, as reported by the manufacturer, and the solution must be miscible with water.</p> <p>Hydrocarbon based - Cleaners composed of photochemically reactive hydrocarbons and/or oxygenated hydrocarbons and have a maximum vapor pressure of 3.75 inches water at 68 degrees F. These cleaners may contain no HAPs.</p>	40 CFR Section 63.744 Table 1; Minn. R. 7011.7320
<p>1) Place cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers upon completing their use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.</p> <p>2) Store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, in closed containers.</p> <p>3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents in such a manner that minimizes spills.</p>	40 CFR Section 63.744(a)(1)-(3); Minn. R. 7011.7320
Hand-wipe cleaning - The Permittee shall use cleaning solvents that meet one of the requirements specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section. Cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in 63.741(f) are exempt from the requirements in paragraphs (b)(1), (b)(2), and (b)(3) of this section.	40 CFR Section 63.744(b); Minn. R. 7011.7320
<p>(1) Meet one of the composition requirements in Table 1 of this section;</p> <p>(2) Have a composite vapor pressure of 45 mm Hg (24.1 in. H<sub>2</sub>O) or less at 20 °C (68 °F); or</p> <p>(3) Demonstrate that the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60% from a baseline adjusted for production. The baseline shall be established as part of an approved alternative plan administered by the State. Demonstrate that the volume of hand-wipe cleaning solvents used in cleaning operations has been reduced by at least 60 percent from a baseline adjusted for production. The baseline shall be calculated using data from 1996 and 1997, or as otherwise agreed upon by the Administrator or delegated State Authority. The baseline shall be approved by the Administrator or delegated State Authority and shall be included as part of the facility's title V or part 70 permit.</p>	(continued from above)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-34**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

<p>Spray gun cleaning - For each spray gun cleaning operation in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned, the Permittee shall use one or more of the techniques, or their equivalent, specified in items (1) through (4) below.</p> <p>Nozzle tip exemption - Cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems that can be programmed to spray into a closed container, shall be exempt from the requirements of items (1) through (4) below.</p>	40 CFR Section 63.744(c); Minn. R. 7011.7320
<p>(1) Enclosed system.</p> <p>(i) Clean the spray gun in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing solvent through the gun.</p> <p>(ii) If leaks are found during the monthly inspection required in 40 CFR Section 63.751(a)[enclosed system leak check], repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed, and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.</p> <p>(2) Nonatomized cleaning - Clean the spray gun by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. Direct the cleaning solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.</p>	40 CFR Section 63.744(c); Minn. R. 7011.7320
<p>(3) Disassembled spray gun cleaning - Disassemble the spray gun and clean the components by hand in a vat, which shall remain closed at all times except when in use. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components.</p> <p>(4) Atomizing cleaning - Clean the spray gun by forcing the cleaning solvent through the gun and direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.</p>	(continued from above)
<p>Exempt cleaning operations - Cleaning operations listed in 40 CFR Section 63.744 (e) are exempt from the requirements of 40 CFR Section 63.744(b) of this section.</p>	40 CFR Section 63.744(e); Minn. R. 7011.7320
<p>Each cleaning operation subject to the requirements of this Group shall be considered in noncompliance if the Permittee fails to institute and carry out the housekeeping measures required under 40 CFR Section 63.744(a).</p> <p>Exemption for incidental emissions.</p> <p>Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this permit condition.</p>	40 CFR Section 63.749(c); Minn. R. 7011.7320
<p>An affected spray gun cleaning operation shall be considered in compliance when each of the following conditions is met:</p> <p>(i) One of the four techniques specified in 40 CFR Section 63.744 (c)(1)[Enclosed system], (c)(2)[Nonatomized cleaning], (c)(3)[Disassembled spray gun cleaning], and (c)(4)[Atomizing cleaning] is used;</p> <p>(ii) The technique selected is operated according to the procedures specified in 40 CFR Section 63.744 (c)(1)[Enclosed system], (c)(2)[Nonatomized cleaning], (c)(3)[Disassembled spray gun cleaning], or (c)(4)[Atomizing cleaning] as appropriate; and</p> <p>(iii) If an enclosed system is used, monthly visual inspections are conducted and any leak detected is repaired within 15 days after detection. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the cleaner is repaired or its use is permanently discontinued.</p>	40 CFR Section 63.749(c)(2); Minn. R. 7011.7320
<b>MONITORING REQUIREMENTS</b>	hdr
<p>If the Permittee is using an enclosed spray gun cleaner under 40 CFR Section 63.744(c)(1), the Permittee shall visually inspect the seals and all other potential sources of leaks associated with each enclosed gun spray cleaner system at least once per month. Each inspection shall occur while the system is in operation.</p>	40 CFR Section 63.751(a); Minn. R. 7011.7320

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-35**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

Reduction of monitoring data  (1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O <sub>2</sub> ) or nanograms per Joule (ng/J) of pollutant.  (2) All emission data shall be converted into the same units as the emission limits for reporting purposes. After conversion into these units, the data may be rounded to the same number of significant digits as used in the emission limits to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).	40 CFR Section 63.751(f); Minn. R. 7011.7320
RECORDKEEPING REQUIREMENTS	hdr
The Permittee shall record the name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.	40 CFR Section 63.752(b)(1); Minn. R. 7011.7320
From enclosed spray gun cleaners identified pursuant to 40 CFR 63.751(a) [K.01. - enclosed system leak check], the Permittee shall keep a record of all leaks that includes for each leak found:  (i) Source identification;  (ii) Date leak was discovered; and  (iii) Date leak was repaired.	40 CFR Section 63.752(b)(5); Minn. R. 7011.7320
REPORTING REQUIREMENTS	hdr
For cleaning operations subject to the requirements of GP009, the Permittee shall submit semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:  - Any instance where a noncompliant spray gun cleaning method is used;  - Any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days; and  - If the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards.	40 CFR Section 63.753(b); Minn. R. 7011.7320



TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Northwest Airlines Inc - Mpls/St Paul  
Permit Number: 05300010 - 003

Subject Item: EU 075 Bldg F Print Shop

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. (These units are not expected to generate particulate matter emissions.)	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-37**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** EU 097 Misc. Boilers/Heaters**Associated Items:** GP 002 Combustion Sources - NOX Limits

GP 004 Boilers/Heaters

What to do	Why to do it
<p>Miscellaneous Boilers/Heaters includes the boilers and heaters identified in the application as "insignificant activities." Since the permit includes emission limits such that the facility is a non-major source under NSR, and the potential emissions of the units identified as "insignificant" are unknown, the emissions must be included in the permit and emission inventory. The following are tracked together as a single unit under this permit:</p> <ul style="list-style-type: none"><li>- Building G Rooftop Natural Gas Fired Space Heaters (5)</li><li>- Building B Process Air Heaters (2)</li><li>- Building C Boiler #5</li><li>- Building C Pump House Boiler</li><li>- Building G Natural Gas Fired Furnaces (3)</li><li>- Any other individual boilers or heaters that are added in the future and which may otherwise have been considered "insignificant activities," unless they trigger applicable requirements not already identified in the permit.</li></ul> <p>Applicable requirements are listed at GP002 and GP004.</p>	definition
<p>Misc. Boilers/Heaters Inventory: The Permittee shall maintain a written list of all emissions units included in EU 097. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change.</p> <p>The list shall correlate the units to the number used in this permit (EU 097) and shall include the data required by the Emission Unit list included in Appendix E of this permit. The date of construction shall be the date the change was made for replaced, modified, or new equipment.</p>	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-38**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** EU 098 Misc. Painting Operations/VOC Sources**Associated Items:** GP 001 Paint & Solvent Usage - VOC Calculations

GP 007 Existing Painting Operations subject to Aerospace Manufacturing &amp; Rework NESHAP

GP 008 Handwipe Cleaning Operations subject to Aerospace Manufacturing and Rework NESHAP

GP 011 Depainting Operations subject to Aerospace Manufacturing &amp; Rework NESHAP

GP 017 Spray Booths/Coating Operations

What to do	Why to do it
<p>Miscellaneous Painting Operations includes the painting operations identified in the application as "insignificant activities." Since the permit includes emission limits on VOC such that the facility is a non-major source under NSR, and the potential VOC emissions of the units identified as "insignificant" are unknown, the emissions must be included in the permit and emission inventory. Applicable requirements are listed at GP001 and GP017. The following are tracked together as a single unit under this permit:</p> <ul style="list-style-type: none"> <li>- Plant Upkeep Spray Painting</li> <li>- Building C Bay 2 Paint Booth</li> <li>- Building C Bay 3 Paint Booth</li> <li>- Building C Bay 4 Paint Booth</li> <li>- Building C Composite Shop Training Area Paint Booth</li> <li>- Building C Lavatory Shop Glue Table</li> </ul>	definition
<ul style="list-style-type: none"> <li>- Building C Raft Shop Paint Booth</li> <li>- Building C Sheet Metal Shop Paint Booth</li> <li>- Building C New Trim Shop Glue Booth</li> <li>- Building C Lavatory Shop Glue Table</li> <li>- Building C Bays 1-4 Maintenance activities</li> <li>- VOC usage not attributable to a specific unit</li> <li>- Any other individual units or operations using VOC-containing paints, cleaners, or glues that are added in the future and which may otherwise have been considered "insignificant activities," unless they trigger applicable requirements not already identified in the permit (excluding Minn. R. 7007.1300, subp. 2.B. activities).</li> </ul>	definition, continued
<p>Misc. Painting Operations/VOC Sources Inventory: The Permittee shall maintain a written list of all emissions units included in EU 098. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change.</p> <p>The list shall correlate the units to the number used in this permit (EU 098) and shall include the data required by the Emission Unit list included in Appendix E of this permit. The date of construction shall be the date the change was made for replaced, modified, or new equipment.</p>	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-39**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** EU 099 Misc. Generators**Associated Items:** GP 002 Combustion Sources - NOX Limits

GP 005 Generators

What to do	Why to do it
<p>Miscellaneous Generators includes the generators identified in the application as "insignificant activities." Since the permit includes emission limits such that the facility is a non-major source under NSR, and the potential emissions of the units identified as "insignificant" are unknown, the emissions must be included in the permit and emission inventory. The following are tracked together as a single unit under this permit:</p> <ul style="list-style-type: none"><li>- Building B Fire Pump</li><li>- Building B Parking Deck Emergency Generator</li><li>- Building B Pump House Fire Pumps (6)</li><li>- Building C Pump House Fire Pumps (4)</li><li>- Building C Bay 1-4 Lighting Emergency Generator</li><li>- Any other individual generators that are added in the future and which may otherwise have been considered "insignificant activities," unless they trigger applicable requirements not already identified in the permit.</li></ul> <p>Applicable Requirements are listed at GP002 and GP005.</p>	<p>definition</p>
<p>Misc. Generators Inventory: The Permittee shall maintain a written list of all emissions units included in EU 099. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change.</p> <p>The list shall correlate the units to the number used in this permit (EU 099) and shall include the data required by the Emission Unit list included in Appendix E of this permit. The date of construction shall be the date the change was made for replaced, modified, or new equipment.</p>	<p>Minn. R. 7007.0800, subp. 2</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-40**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** EU 100 Misc. Test Cells**Associated Items:** GP 002 Combustion Sources - NOX Limits

GP 006 Test Cells

What to do	Why to do it
<p>Miscellaneous Test Cells includes the test stands identified in the application as "insignificant activities." Since the permit includes emission limits such that the facility is a non-major source under NSR, and the potential emissions of the units identified as "insignificant" are unknown, the emissions must be included in the permit and emission inventory. The following are tracked together as a single unit under this permit:</p> <ul style="list-style-type: none"><li>- Building B APU Test cell area, APU test cell (2)</li><li>- Any other individual engine or APU test cells or test stands that are added in the future and would otherwise have been considered "insignificant activities," unless they trigger applicable requirements not already identified in the permit.</li></ul> <p>Applicable Requirements are listed at GP002 and GP006.</p>	definition
<p>Misc. Test Cells: The Permittee shall maintain a written list of all emissions units included in EU 100. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change.</p> <p>The list shall correlate the units to the number used in this permit (EU 100) and shall include the data required by the Emission Unit list included in Appendix E of this permit. The date of construction shall be the date the change was made for replaced, modified, or new equipment.</p>	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-41**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item: EU 101 Misc. Controlled PM Sources****Associated Items:** CE 052 Misc Filter Controls

What to do	Why to do it
<p>Miscellaneous Controlled PM Sources includes particulate sources identified in the application as "insignificant activities" under Minn. R. 7007.1300, subp. 3(l) or Minn. R. 7008.4110. Since the permit includes emission limits such that the facility is a non-major source under NSR, and the potential emissions of the units identified as "insignificant" are unknown, the emissions must be included in the permit and emission inventory. Applicable Requirements are listed below. The following are tracked together as a single unit under this permit:</p> <ul style="list-style-type: none"> <li>- Bldg B Engine Shop Engine Buildup (Mid North Wall) Dust Collector</li> <li>- Bldg B GSE Shop Glass Bead Blast Unit</li> </ul>	definition
<ul style="list-style-type: none"> <li>- Bldg C Bay 1 Dust Collector</li> <li>- Bldg C Bay 2 Mezzanine (Table Top) Dust Collector</li> <li>- Bldg C Bay 2 Plastic Bead Blast Unit</li> <li>- Bldg C Bay 3 Dust Collector</li> <li>- Bldg C Bay 3 Mezzanine Dust Collector</li> <li>- Bldg C Bay 4 Plastic Bead Blast Unit</li> <li>- Bldg C Bay 4 (Southeast) Grit Blast Unit</li> <li>- Bldg C Bay 5 Grit Blast Unit</li> <li>- Bldg C Cleaning Room AIO2 Blast Unit</li> <li>- Bldg C Cleaning Room Glass Bead Blast Unit</li> <li>- Bldg C Cleaning Room Plastic Bead Blast Unit (3)</li> <li>- Bldg C Cleaning Room Grit Blast Unit</li> <li>- Bldg C Composite Shop Central Vacuum System (Ext. Venting)</li> <li>- Bldg C Composite Shop Grinding Booth (2)</li> <li>- Bldg C Composite Shop (New Plating Shop) Grit Blast Unit</li> <li>- Bldg C Composite Shop (New Plating Shop) Grinding Booth</li> <li>- Bldg C Composite Shop Training Area Grinding Booth</li> <li>- Bldg C Composite Shop Training Area Dust Collector</li> </ul>	definition, continued from above
<ul style="list-style-type: none"> <li>- Bldg C Electric Shop Central Vacuum System (Ext. Venting)</li> <li>- Bldg C Electric Shop Dust Collector (2)</li> <li>- Bldg C Electric Shop (Cleaning Room) Glass Bead Blast Unit</li> <li>- Bldg C Electric Shop (Cleaning Room) Grit Blast Unit</li> <li>- Bldg C GSE Shop Glass Bead Blast Unit</li> <li>- Bldg C GSE Shop Dust Collector</li> <li>- Bldg C New Electric Shop (Bench Top) Grinding Booth</li> <li>- Bldg C Plant Maintenance Glass Bead Blast Unit</li> <li>- Bldg C Sheet Metal Shop Dust Collector (4)</li> <li>- Bldg C Sheet Metal Shop Grinding Booth</li> <li>- Bldg C Sheet Metal Shop (Engine) Mg Grinding Machine</li> <li>- Bldg C Stores - Crate Area Sawdust Collector</li> <li>- Bldg C Trim Shop Dust Collector</li> <li>- Bldg C Wood Shop Grinding Booth (3)</li> <li>- Bldg C Wood Shop Dust Collector (3)</li> <li>- Any other similar individual unit existing or added in the future which would otherwise be considered an "insignificant activity" or "conditionally insignificant activity" unless they trigger applicable requirements not already identified in the permit.</li> </ul>	definition, continued from above
<p>Misc. Controlled PM Sources Inventory: The Permittee shall maintain a written list of all emissions units included in EU 101. The Permittee shall update the list annually to include any replaced, modified, or new equipment prior to making the change.</p> <p>The list shall correlate the units to the number used in this permit (EU 101) and shall include the data required by the Emission Unit list included in Appendix E of this permit. The date of construction shall be the date the change was made for replaced, modified, or new equipment.</p>	Minn. R. 7007.0800, subp. 2
EMISSION AND OPERATIONAL LIMITS	hdr
Total Particulate Matter: less than or equal to 40 tons/year using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 40 tons/year using 12-month Rolling Sum	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**
**A-42**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. This limit applies to each individual unit listed in EU101. It is assumed that each individual component of EU101 has a maximum potential to emit 0.3 tons of particulate matter/PM10 per year.	Minn. R. 7011.0710, subp. 1(A) (units in operation before July 9, 1969)
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn R. 7011.0730 or Minn. R. 7011.0735. This limit applies to each individual unit listed in EU101. It is assumed that each individual component of EU101 has a maximum potential to emit 0.3 tons of particulate matter/PM10 per year.	Minn. R. 7011.0715, subp. 1(A) (units not in operation before July 9, 1969)
The Permittee shall operate and maintain the filters at all times that any emission unit controlled by the filters is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2 and 14
The Permittee shall operate and maintain control equipment such that it achieves a collection efficiency for Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain control equipment such that it achieves a collection efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000
CONTROL REQUIREMENTS (CE 052)	hdr
Visible Emissions: The Permittee shall check the outlet of each externally vented filter for any visible emissions once each calendar week, during operation of the controlled unit, during daylight hours.  The Permittee shall record the time and date of each visible emission inspection and whether or not any visible emissions were observed	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5
The Permittee shall visually inspect the unit at each use, ensuring that it is connected to control equipment, that the control equipment is operating properly by checking for visual signs of dust buildup or other indications of system performance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5
Quarterly Inspections of Externally Vented Control Devices: At least once per calendar quarter, or more frequently if required by the manufacturing specifications, the Permittee shall inspect the control equipment components that are not subject to wear, including structural components, housings, ducts, and hoods. The Permittee shall maintain a written record of these inspections and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 2, 5 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any filter or filter components are found during the inspections to need repair. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 2, 5, and 14
RECORDKEEPING WHEN ACTUAL EMISSIONS FROM EU 101 ARE LESS THAN OR EQUAL TO 20 TONS PER YEAR	hdr
By April 1 of each calendar year, the Permittee shall calculate and record the sum of actual PM/PM10 emissions from each of the units included in EU 101, and the calculation itself, for the previous calendar year. This calculation must include all units included in EU 101. The sum of actual emissions for PM or PM10 must not exceed 20 tons. If the actual emissions of PM or PM10 are more than 20 tons, then the Permittee must comply with the recordkeeping requirements for actual emissions greater than 20 tons per year, below.	Minn. R. 7007.0800, subp. 4 and 5
Actual Emission Calculations: For each unit comprising EU101, the actual emissions shall be calculated or estimated using one of the following methods:  A. Calculated using estimated actual annual product throughput, the most current emission factor from AP-42, and a control efficiency of 99%, OR  B. Calculated using estimated actual airflow rate, the estimated actual annual hours of operation, and an assumed PM/PM10 concentration of 0.02 gr/dscf, OR  C. Estimated by multiplying the estimated PTE of 0.3 tons per year, times the ratio of actual operating hours to 8760 [ 0.3 tons X (actual hours / 8760 hours)]	Minn. R. 7007.0800, subp. 4 and 5
RECORDKEEPING WHEN ACTUAL EMISSIONS FROM EU 101 ARE GREATER THAN 20 TONS PER YEAR	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-43**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

By the last day of each month, the Permittee shall calculate and record the sum of actual PM/PM10 emissions from each of the units included in EU 101, and the calculation itself, for the previous calendar month and previous 12 months (12-month rolling sum). This calculation must include all units included in EU 101. The sum of actual emissions for PM or PM10 must not exceed 20 tons. If the actual emissions of PM or PM10 are less than or equal to 20 tons, then the Permittee may comply with the annual recordkeeping requirements, above.	Minn. R. 7007.0800, subp. 4 and 5
<p>Actual Emission Calculations: For each unit comprising EU101, the actual monthly emissions shall be calculated or estimated using one of the following methods:</p> <p>A. Calculated using estimated actual monthly product throughput, the most current emission factor from AP-42, and a control efficiency of 99%, OR</p> <p>B. Calculated using estimated actual airflow rate, the estimated actual monthly hours of operation, and an assumed PM/PM10 concentration of 0.02 gr/dscf, OR</p> <p>C. Estimated by multiplying the estimated PTE of 0.3 tons per year, times the ratio of actual operating hours for the month to 8760 [ 0.3 tons X (actual hours for previous month / 8760 hours)]</p>	Minn. R. 7007.0800, subp. 4 and 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-44**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** CE 038 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 078 Building C Bay 5 Pylon Bead Blast

GP 016 Blasting &amp; Similar Particulate Sources

What to do	Why to do it
The Permittee shall operate and maintain each fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.  If the the necessary monitoring equipment for measuring and recording the pressure drop as required by this permit is not in place at the time of permit issuance, the Permittee shall install such equipment within 180 days of permit issuance.	Minn. R. 7007.0800, subp. 4
Pressure Drop: greater than 1.0 inches of water column and less than 6.0 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.  The Permittee shall record the pressure drop once every 24 hours when in operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-45**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** CE 044 Water Curtain - Use for Water Wash Paint Booths**Associated Items:** EU 029 Bldg C Plasma Spray Booth

GP 017 Spray Booths/Coating Operations

What to do	Why to do it
Inspections: Once each day that the unit controlled by the water curtain is in operation, the Permittee shall visually inspect the condition and operation of each water curtain with respect to any condition that may affect the performance. The Permittee shall maintain a written record of these inspections each day the unit is in operation.	Minn. R. 7007.0800, subp. 4, 5 and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
Corrective Actions: If any components of a water curtain are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-46**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** CE 046 Fiberglass Filter w/o Cardboard Frame**Associated Items:** EU 062 Bldg B GSE Shop Spray Booth

GP 017 Spray Booths/Coating Operations

What to do	Why to do it
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Inspections: Once day that the unit controlled by the filter is in operation, the Permittee shall visually inspect the condition of each filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a written record of filter inspections each day that the unit is operated.	Minn. R. 7007.0800, subp. 4, 5 and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-47**

01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

**Subject Item:** CE 051 2-Stage NESHAP Comp. Filter**Associated Items:** EU 063 Bldg C Composite Shop Spray Booth

What to do	Why to do it
<p>The Permittee shall operate and maintain the filter in accordance with the Operation and Maintenance (O &amp; M) Plan. The Permittee shall keep copies of the O &amp; M Plan available onsite for use by staff and MPCA staff.</p> <p>The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.</p>	<p>40 CFR Section 63.745(g)(2)(iv)(A); Minn. R. 7011.7320; Minn. R. 7007.0800, subp. 14</p>
<p>The dry particulate filter system must be certified using the methods described in 40 CFR Section 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 below</p> <p>Table 1. -- Two-Stage Arrestor; Liquid Phase Challenge for Existing Sources Filtration efficiency Aerodynamic particle requirement, % size range, um &gt; 90 &gt; 5.7 &gt; 50 &gt; 4.1 &gt; 10 &gt; 2.2</p> <p>Table 2. -- Two-Stage Arrestor; Solid Phase Challenge for Existing Sources Filtration efficiency Aerodynamic particle requirement, % size range, um &gt; 90 &gt; 8.1 &gt; 50 &gt; 5.0 &gt; 10 &gt; 2.6</p>	<p>40 CFR Section 63.745(g)(2)(i); 40 CFR Section 63.749(e); Minn. R. 7011.7320; Minn. R. 7007.0800, subp. 2 and 14</p>
<p>Pressure Drop: greater than 0.025 inches of water column and less than or equal to 1.8 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated</p>	<p>Minn. R. 7007.0800, subp. 2 and 14</p>
<p>For each dry particulate filter system used to meet the requirements of 40 CFR Section 63.745(g)(2), the Permittee shall, while primer or topcoat application operations are occurring, continuously monitor the pressure drop across the system and read and record the pressure drop once per shift following the recordkeeping requirements of 40 CFR Section 63.752(d).</p> <p>This log shall include the acceptable limit(s) of pressure drop, as specified by the filter or booth manufacturer or in locally prepared operating procedures</p>	<p>40 CFR Section 63.752(d)(1) &amp; (3); 40 CFR Section 63.751(c)(1); 40 CFR Section 63.745(g)(2)(iv)(c); Minn. R. 7011.7320; Minn. R. 7007.0800, subp. 4, 5, &amp; 14</p>
<p>Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.</p>	<p>40 CFR Section 63.745(g)(2)(iv)(B); Minn. R. 7011.7320; Minn. R. 7007.0800, subp. 4</p>
<p>Recordkeeping of Pressure Drop. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.</p>	<p>Minn. R. 7007.0800, subp. 4, 5 and 14</p>
<p>If the pressure drop across the dry particulate filter system, as recorded pursuant to 40 CFR Section 63.752(d)(1), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, shut down the operation immediately and take corrective action.</p> <p>If the booth manufacturer's or locally prepared maintenance procedures for the filter have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop is returned within the specified limit(s).</p>	<p>40 CFR Section 63.745(g)(3); 40 CFR Section 63.749(e); Minn. R. 7011.7320; Minn. R. 7007.0800, subp. 4, 5, &amp; 14</p>

**TABLE B: SUBMITTALS****B-1** 01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul  
Permit Number: 05300010 - 003

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak  
Air and Radiation Branch  
EPA Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency  
Clean Air Markets Division  
1200 Pennsylvania Avenue NW (6204N)  
Washington, D.C. 20460

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

Facility Name: Northwest Airlines Inc - Mpls/St Paul  
Permit Number: 05300010 - 003

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility

**TABLE B: RECURRENT SUBMITTALS****B-3** 01/22/09

Facility Name: Northwest Airlines Inc - Mpls/St Paul

Permit Number: 05300010 - 003

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 06/15/2005 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 06/15/2005 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

## APPENDIX B – Combustion NO<sub>x</sub> and VOC Emission Calculations

**Facility Name:** Northwest Airlines Inc - Mpls/St Paul

**Permit Number:** 05300010-003

### I. Boiler/Heater NO<sub>x</sub> Emissions

Equation B.1 NO<sub>x</sub> emissions based on combustion of fuel in boilers and/or heaters

$$N(bh) = \frac{(Q_{ng} \times EF_{ng}) + (Q_6 \times EF_6) + (Q_5 \times EF_5) + (Q_4 \times EF_4) + (Q_2 \times EF_2)}{2000} \quad \text{Equation B.1}$$

Where:

N(bh) = total NO<sub>x</sub> emissions from boilers and heaters for the previous month (tons)

Q<sub>ng</sub> = the total quantity of natural gas combusted in all boilers and heaters during the previous month (cubic feet)

Q<sub>6</sub> = the total quantity of number 6 fuel oil combusted in all boilers and heaters during the previous month (gallons)

Q<sub>5</sub> = the total quantity of number 5 fuel oil combusted in all boilers and heaters during the previous month (gallons)

Q<sub>4</sub> = the total quantity of number 4 fuel oil combusted in all boilers and heaters during the previous month (gallons)

Q<sub>2</sub> = the total quantity of number 2 fuel oil combusted in all boilers and heaters during the previous month (gallons)

EF<sub>ng</sub> = a NO<sub>x</sub> emission factor for natural gas combustion, in pounds per cubic foot combusted. This is either a site-specific factor obtained from performance testing (if required), or the current, appropriate factor from AP-42, Section 1.4. At the time of permit issuance, this emission factor is 0.0001 lb/cubic foot.

EF<sub>6</sub> = a NO<sub>x</sub> emission factor for number 6 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.055 lb/gallon.

EF<sub>5</sub> = a NO<sub>x</sub> emission factor for number 5 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.055 lb/gallon.

EF<sub>4</sub> = a NO<sub>x</sub> emission factor for number 4 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.02 lb/gallon.

EF<sub>2</sub> = A NO<sub>x</sub> emission factor for number 2 fuel oil (which may be combined with jet fuel) combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, the emission factor is 0.02 lb/gallon.



## II. Generator NO<sub>x</sub> Emissions

Equation B.2 Diesel fuel NO<sub>x</sub> emissions based on actual or estimated hp-hr power output and natural gas NO<sub>x</sub> emissions based on actual fuel usage (cubic feet)

$$N(g) = \frac{(P_d \times EF_{pd}) + (P_e \times EF_{pd}) + (Q_g \times EF_g)}{2000} \quad \text{Equation B.2}$$

OR

Equation B.3 Diesel fuel NO<sub>x</sub> emissions based on actual or estimated heat input (million Btu) and natural gas NO<sub>x</sub> emissions based on actual fuel usage (cubic feet)

$$N(g) = \frac{(H_d \times EF_{hd}) + (H_e \times EF_{hd}) + (Q_g \times EF_g)}{2000} \quad \text{Equation B.3}$$

Where:

N(g) = total NO<sub>x</sub> emissions from generators for the previous month (tons)

P<sub>d</sub> = the total actual power output (where known) from all diesel fuel combustion in generators during the previous month (hp-hr)

P<sub>e</sub> = the total estimated power output (where actual power is not known) from diesel fuel combustion in generators during the previous month (hp-hr)

H<sub>d</sub> = the total actual heat input (where known) from diesel fuel to all generators during the previous month (million Btu)

H<sub>e</sub> = the total estimated heat input (where actual heat input is not known) from diesel fuel to generators during the previous month (million Btu)

Q<sub>g</sub> = the total cubic feet of natural gas combusted in all generators during the previous month (cubic feet)

EF<sub>pd</sub> = a NO<sub>x</sub> emission factor for diesel fuel combustion based on hp-hr power output. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Table 3.3-1. At the time of permit issuance, this emission factor is 0.031 lb/hp-hr power output.

EF<sub>hd</sub> = a NO<sub>x</sub> emission factor for diesel fuel combustion based on diesel fuel-based heat input. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Table 3.3-1. At the time of permit issuance, this emission factor is 4.41 lb/million Btu heat input.

EF<sub>g</sub> = a NO<sub>x</sub> emission factor for natural gas combustion based on the quantity of natural gas combusted. This is either a site-specific factor obtained from performance testing (if required), or an appropriate factor from AP-42, Section 3.2. At the time of permit issuance, this emission factor is 0.00340 lb/cubic foot.

### III. Boiler/Heater VOC Emissions

Equation B.4 VOC emissions based on combustion of fuel in boilers and/or heaters

$$V(bh) = \frac{(Q_{ng} \times EF_{ng}) + (Q_6 \times EF_6) + (Q_5 \times EF_5) + (Q_4 \times EF_4) + (Q_2 \times EF_2)}{2000} \quad \text{Equation B.4}$$

Where:

$V(bh)$  = total VOC emissions from boilers and heaters for the previous month (tons)

$Q_{ng}$  = the total quantity of natural gas combusted in all boilers and heaters during the previous month (cubic feet)

$Q_6$  = the total quantity of number 6 fuel oil combusted in all boilers and heaters during the previous month (gallons)

$Q_5$  = the total quantity of number 5 fuel oil combusted in all boilers and heaters during the previous month (gallons)

$Q_4$  = the total quantity of number 4 fuel oil combusted in all boilers and heaters during the previous month (gallons)

$Q_2$  = the total quantity of number 2 fuel oil combusted in all boilers and heaters during the previous month (gallons)

$EF_{ng}$  = a VOC emission factor for natural gas combustion, in pounds per cubic foot combusted. This is either a site-specific factor obtained from performance testing (if required), or the current, appropriate factor from AP-42, Section 1.4. At the time of permit issuance, this emission factor is 0.0000055 lb/cubic foot.

$EF_6$  = a VOC emission factor for number 6 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.00028 lb/gallon.

$EF_5$  = a VOC emission factor for number 5 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.00028 lb/gallon.

$EF_4$  = a VOC emission factor for number 4 fuel oil combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, this emission factor is 0.00020 lb/gallon.

$EF_2$  = A VOC emission factor for number 2 fuel oil (which may be combined with jet fuel) combustion, in pounds per gallon combusted. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Section 1.3. At the time of permit issuance, the emission factor is 0.0002 lb/gallon.

#### IV. Generator VOC Emissions

Equation B.5 Diesel fuel VOC emissions based on actual or estimated hp-hr power output and natural gas VOC emissions based on actual fuel usage (cubic feet)

$$V(g) = \frac{(P_d \times EF_{pd}) + (P_e \times EF_{pd}) + (Q_g \times EF_g)}{2000} \quad \text{Equation B.5}$$

OR

Equation B.6 Diesel fuel NO<sub>x</sub> emissions based on actual or estimated heat input (million Btu) and natural gas NO<sub>x</sub> emissions based on actual fuel usage (cubic feet)

$$V(g) = \frac{(H_d \times EF_{hd}) + (H_e \times EF_{hd}) + (Q_g \times EF_g)}{2000} \quad \text{Equation B.6}$$

Where:

V(g) = total VOC emissions from generators for the previous month (tons)

P<sub>d</sub> = the total actual power output (where known) from all diesel fuel combustion in generators during the previous month (hp-hr)

P<sub>e</sub> = the total estimated power output (where actual power is not known) from diesel fuel combustion in generators during the previous month (hp-hr)

H<sub>d</sub> = the total actual heat input (where known) from diesel fuel to all generators during the previous month (million Btu)

H<sub>e</sub> = the total estimated heat input (where actual heat input is not known) from diesel fuel to generators during the previous month (million Btu)

Q<sub>g</sub> = the total cubic feet of natural gas combusted in all generators during the previous month (cubic feet)

EF<sub>pd</sub> = a VOC emission factor for diesel fuel combustion based on hp-hr power output. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Table 3.3-1. At the time of permit issuance, this emission factor is 0.002514 lb/hp-hr power output.

EF<sub>hd</sub> = a VOC emission factor for diesel fuel combustion based on diesel fuel-based heat input. This is either a site-specific factor obtained from performance testing (if required), or a current factor from AP-42, Table 3.3-1. At the time of permit issuance, this emission factor is 0.36 lb/million Btu heat input.

EF<sub>g</sub> = a VOC emission factor for natural gas combustion based on the quantity of natural gas combusted. This is either a site-specific factor obtained from performance testing (if required), or an appropriate factor from AP-42, Section 3.2. At the time of permit issuance, this emission factor is 0.0000829 lb/cubic foot.

## APPENDIX C – Compliance Equations

**Facility Name:** Northwest Airlines Inc - Mpls/St Paul

**Permit Number:** 05300010-003

**Equation C.1 (from 40 CFR §63.750(b)(2)):** 
$$PP_c = \sum_{i=1}^n \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \sum_{e=1}^n \frac{W_e}{MW_e} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

where:

$W_i$  = Weight of the "i"th VOC compound, grams.

$W_w$  = Weight of water, grams.

$W_e$  = Weight of non-HAP, non-VOC compound, grams.

$MW_i$  = Molecular weight of the "i"th VOC compound, g/g-mole.

$MW_w$  = Molecular weight of water, g/g-mole.

$MW_e$  = Molecular weight of exempt compound, g/g-mole.

$PP_c$  = VOC composite partial pressure at 20°C, mm Hg.

$VP_i$  = Vapor pressure of the "i"th VOC compound at 20°C, mm Hg.

**Equation C.2 (from 40 CFR § 63.750(c)(3), Eq. 1):** 
$$V_{wi} = \frac{D_{ci}W_{wi}}{D_w}$$

where

$V_{wi}$  = volume (gal) of water in one gal of coating i.

$D_{ci}$  = density (lb of coating per gal of coating) of coating i.

$W_{wi}$  = weight fraction (expressed as a decimal) of water in coating i.

$D_w$  = density of water, 8.33 lb/gal.

**Equation C.3 (from 40 CFR § 63.750(c)(3), Eq. 2):** 
$$M_{Hi} = D_{ci}W_{Hi}$$

where

$M_{Hi}$  = mass (lb) of organic HAP in one gal of coating i.

$D_{ci}$  = density (lb of coating per gal of coating) of coating i.

$W_{Hi}$  = weight fraction (expressed as a decimal) of organic HAP in coating i.

**Equation C.4 (from 40 CFR § 63.750(c)(3), Eq. 3):** 
$$H_i = \frac{M_{Hi}}{(1 - V_{wi})}$$

where

$H_i$  = mass of organic HAP emitted per volume of coating i (lb/gal) less water as applied.  
[a.k.a.  $H(i)$ ]

$M_{Hi}$  = mass (lb) of organic HAP in one gal of coating i.

$V_{wi}$  = volume (gal) of water in one gal of coating i.

**Equation C.5 (from 40 CFR § 63.750(e)(2), Eq. 5):**

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w}$$

where

$V_{wi}$  = volume (gal) of water in one gal of coating i.

$D_{ci}$  = density (lb of coating per gal of coating) of coating i.

$W_{wi}$  = weight fraction (expressed as a decimal) of water in coating i.

$D_w$  = density of water, 8.33 lb/gal.

**Equation C.6 (from 40 CFR § 63.750(e)(2), Eq. 6):**

$$M_{Vi} = D_{ci} W_{Vi}$$

where

$M_{Vi}$  = mass (lb) of VOC in one gal of coating i.

$D_{ci}$  = density (lb of coating per gal of coating) of coating i.

$W_{Vi}$  = weight fraction (expressed as a decimal) of VOC in coating i.

**Equation C.7 (from 40 CFR § 63.750(e)(2), Eq. 7):**

$$G_i = \frac{M_{Vi}}{(1 - V_{wi}) - V_{Xi}}$$

where

$G_i$  = mass of VOC emitted per volume of coating i (lb/gal) (less water and exempt solvents) as applied. [a.k.a.  $G(i)$ ]

$M_{Vi}$  = mass (lb) of VOC in one gal of coating i.

$V_{wi}$  = volume (gal) of water in one gal of coating i.

$V_{Xi}$  = volume (gal) of exempt solvents in one gal of coating i.

**Equation C.8 (from 40 CFR § 63.750(i)(2), Eq. 19):**

$$P = \frac{E_b - E_a}{E_b} \times 100$$

where:

$P$  = organic HAP or VOC emission reduction, percent.

$E_b$  = organic HAP or VOC emissions, in pounds, before the alternative application technique was implemented, as determined under 40 CFR 63.750(i)(2)(i).

$E_a$  = organic HAP or VOC emissions, in pounds, after the alternative application technique was implemented, as determined under 40 CFR 63.750(i)(2)(ii).

**Equation C.9 (from 40 CFR § 63.750(j), Eq. 20 (volume)):**

$$C = \frac{\sum_{i=1}^n V_{si}}{A}$$

where:

C = annual average volume (gal per aircraft) of organic HAP-containing chemical stripper used for spot stripping and decal removal.

n = number of organic HAP-containing chemical strippers used in the annual period.

$V_{si}$  = volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A = number of aircraft for which depainting operations began during the annual period.

**Equation C.10 (from 40 CFR § 63.750(j), Eq. 21 (weight)):**

$$C = \frac{\sum_{i=1}^n \left( V_{si} D_{hi} \left( \sum_{h=1}^m W_{hi} \right) \right)}{A}$$

where:

C = annual average weight (lb per aircraft) of organic HAP (chemical stripper) used for spot stripping and decal removal.

m = number of organic HAP contained in each chemical stripper, as applied.

n = number of organic HAP-containing chemical strippers used in the annual period.

$W_{hi}$  = weight fraction (expressed as a decimal) of each organic HAP (i) contained in the chemical stripper, as applied, for each aircraft depainted.

$D_{hi}$  = density (lb/gal) of each organic HAP-containing chemical stripper (i), used in the annual period.

$V_{si}$  = volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A = number of aircraft for which depainting operations began during the annual period.



## APPENDIX D – Insignificant Activities

**Facility Name:** Northwest Airlines Inc - Mpls/St Paul

**Permit Number:** 05300010-003

### Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirements
3(H)	Miscellaneous:	
	4. brazing, soldering or welding equipment; Building B GSE Shop welding booth Building C Bay 5 welding area Building C Bay 6 welding area Building C Galley Shop welding booth Building C Sheet Metal shop welding area Building C New Electric Shop NiCad battery soldering room Building C New Electric Shop soldering room Building C Plant maintenance welding Building C Raft Shop soldering booth	Minn. R. 7011.0710/0715
	8. cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners. Building C Bay 3 Cleaning Booth Building C Bay 3 Mezzanine Alkaline Cleaning Booth Building C Bay 4 2 <sup>nd</sup> Level Cleaning Booth Building C Bay 5 Cleaning Room Building C Bay 5/6 2 <sup>nd</sup> Level Seat Shop Cleaning Booth Building C Bay 6 Cleaning Booth Building C Cleaning Room Alkaline Cleaning System	Minn. R. 7011.0710/0715
3(I)	Individual emissions units at a stationary source, each of which have a <u>potential</u> to emit the following pollutants in amounts less than: 1. 4,000 lbs/year of carbon monoxide; and 2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone. Building B Hangars 7&8 fuel ventilation	



Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirements
	Building C Bays 1-6 fuel ventilation Building C Composite Shop North & South Autoclaves Building C Composite Shop Chrome Scrubber	Minn. R. 7011.01710/0715
4	<p>At a Part 70 facility, individual emissions units with emissions less than all the following limits but not included in subpart 2:</p> <p>A. potential emissions of 5.7 pounds per hour or actual emissions of two tons per year of carbon monoxide;</p> <p>B. potential emissions of <a href="#">2.28</a> pounds per hour or actual emissions of one ton per year for particulate matter, particulate matter less than ten microns, nitrogen oxide, sulfur dioxide, and VOCs; and</p> <p>C. for hazardous air pollutants, emissions units with:</p> <p>(1) potential emissions of 25 percent or less of the hazardous air pollutant thresholds listed in subpart 5; or</p> <p>(2) combined HAP actual emissions of one ton per year unless the emissions unit emits carbon tetrachloride; 1,2-dibromo-3-chloropropane; ethylene dibromide; hexachlorobenzene; polycyclic organic matter; antimony compounds; arsenic compounds, including inorganic arsine; cadmium compounds; chromium compounds; lead compounds; manganese compounds; mercury compounds; nickel compounds; selenium compounds; 2,3,7,8-tetrachlorodibenzo-p-dioxin; or dibenzofuran.</p> <p>Building C Plating Line</p> <p>Various VOC storage tanks (see list on next page)</p> <p>Various non-VOC storage tanks (see list on next page)</p>	Minn. R. 7011.0710/0715

## **VOC Storage Tanks**

- Building C 731 #5 Fuel Oil Tank
- Building C 735 #5 Fuel Oil Tank
- Building C 133 #5 Fuel Oil Tank/Waste Jet A
- Building C 134 #5 Fuel Oil Tank/Waste Jet A
- Building B B-22 #6 Fuel Oil Tank – Out of Service
- Building B N11 #6 Fuel Oil Tank
- Building B N12 #6 Fuel Oil Tank
- Building B N13 #6 Fuel Oil Tank
- Building B B-24 AFFF Storage Tank
- Building B B-25 AFFF Storage Tank
- Building C C-05 AFFF Storage Tank
- Building C C-06 AFFF Storage Tank
- Building C C-07 AFFF Storage Tank
- Building C C-08 AFFF Storage Tank
- Building C C-09 AFFF Storage Tank
- Building C C-10 AFFF Storage Tank
- Building C CT-7 AFFF Storage Tank
- Building C CT-8 AFFF Storage Tank
- Building B B-45 Antifreeze Storage Tank
- Building C C-13 Antifreeze Storage Tank
- Building D D-07 Antifreeze Storage Tank
- De-Ice S-09 Antifreeze Storage Tank
- Building B B-50 Boiler Chemical Storage Tank
- 001 Diesel Storage Tank
- Building B B-21 Diesel Storage Tank
- Building B B-26 Diesel Storage Tank
- Building B B-58 Diesel Storage Tank
- Building B BPH-1 Diesel Storage Tank
- Building B BPH-2 Diesel Storage Tank
- Building B BPH-3 Diesel Storage Tank
- Building B BPH-4 Diesel Storage Tank
- Building C 113 Diesel Storage Tank
- Building C 695 Diesel Storage Tank
- Building C CPH-1 Diesel Storage Tank
- Building C CPH-2 Diesel Storage Tank
- Building C CPH-3 Diesel Storage Tank
- Building C CPH-4 Diesel Storage Tank
- Building D 111 Diesel Storage tank
- Building D 112 Diesel Storage Tank
- Building G G-01 Diesel Storage Tank
- Building N 1 Diesel Storage Tank
- Building C CT-10 Diesel Storage Tank
- Building F F-03 Diesel Storage Tank
- Building C C-21 Ethylene Glycol Tank
- De-Ice S-06 Gasoline Storage Tanks
- Building D 110 Gasoline Storage Tanks
- S-03 Gasoline Storage Tanks
- Building C C-24 Gasoline Storage Tanks
- Building C CT-11 Glycol Storage Tank
- Building B B-01 Glycol/water Storage Tank
- De-ice S-07 Jet A Storage Tank
- Building B B-57 Jet A Storage Tank
- Building B N04 Jet A Storage Tank
- Building B N05 Jet A Storage Tank
- Building B N06 Jet A Storage Tank
- Building B N08 Jet A Storage Tank
- Building B NW1 Jet A Storage Tank
- Building B NW2 Jet A Storage Tank
- Building F N09 Jet A Storage Tank
- Building C 101 Jet A Storage Tank
- Building C 102 Jet A Storage Tank
- Building C 131 Jet A Waste Storage Tank
- Building C 132 Jet A Waste Storage Tank
- Building C 135 Jet A Waste Storage Tank
- Building C 136 Jet A Waste Storage Tank
- Storage Tank
- Building B B-44 Propylene Glycol Storage Tank
- Building B B-56 Propylene Glycol Storage Tank
- Building D D-02 Propylene Glycol Storage Tank
- Building D D-03 Propylene Glycol Storage Tank
- Building D D-12 Propylene Glycol Storage Tank
- Signature S-01 Propylene Glycol Storage Tank
- Signature S-02 Propylene Glycol Storage Tank
- Building C C-01 Propylene Glycol Tank - Boiler System
- Building B B-24 Propylene Glycol Tank (50/50 Mix)
- Building B B-15 Propylene Glycol Tank (Pure)
- Building B B-16 Propylene Glycol Tank (Pure)
- De-ice S-13 Propylene Glycol Tank (Type 1)
- De-ice S-14 Propylene Glycol Tank (Type 1)
- De-ice S-15 Propylene Glycol Tank (Type 1)
- De-ice S-16 Propylene Glycol Tank (Type 1)
- De-ice S-17 Propylene Glycol Tank (Type 4)
- De-ice S-18 Propylene Glycol Tank (used)
- Building B B-17 Propylene Glycol/Water Tank (50/50 Mix)
- Building B B-03 Propylene Glycol Tank (Empty)
- Building D D-13 Propylene Glycol Storage Tank

## **Non-VOC Storage Tanks**

- Building B B-08 Brine Storage Tank
- Building B B-07 Brine Storage Tank for softeners
- Building B B-23 Brine Storage Tank
- Building C C-18 Chrome Rinse Tank
- Building B B-02 Cleaner concentrate tank
- Building C C-16 Metal Treatment Room spill overflow tank
- Building C C-17 Metal Treatment Room spill overflow tank
- Building C CT-13 Wastewater Concentrate Storage Tank

## **APPENDIX E – Emission Units**

**Facility Name:** Northwest Airlines Inc - Mpls/St Paul  
**Permit Number:** 05300010-003

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 05300010-003**

This technical support document is intended for all parties interested in the permit and to meet the requirements that have been set forth by federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: <b>4512</b> )
Northwest Airlines, Inc. 7500 Airline Drive Minneapolis, MN 55450-1101	7500 Airline Dr C9025 Minneapolis Hennepin County
Contact: Marvin Dietrich Phone: (612) 727-4842	

**1.2. Facility Description**

The Northwest Airlines (NWA) operates a maintenance base to conduct aircraft maintenance and repairs for passenger aircraft. Activities include disassembly and repair of aircraft components, metal plating, painting, media blasting, welding, jet engine testing, and reassembly of aircraft. NWA also conducts aircraft performance checks as required by the Federal Aviation Administration.

The permitted facility includes operations in buildings B, C, F, and G. The permit includes federally enforceable operating conditions, emission limitations, and material usage limitations such that the facility is considered a non-major source under federal New Source Review regulations. The facility is a major source under the Part 70 operating permit program.

**1.3. Description of the Permit Action**

On November 13, 2008, MPCA received a permit amendment application for this facility in accordance with Minn. R. 7007.1400 subp. 1(D) (5). This permit action is an administrative amendment to remove several pieces of equipment from the permit and facility description since they have been permanently removed from the facility. Additionally, the operator descriptions of EU090 and EU091 have been changed due to changes at the facility.

At the total facility level, the Computer Dispersion Modeling Information requirement was removed since it was submitted on June 13, 2008. Updates were made to reflect current MPCA policy, including adding requirements for when a permit amendment is not needed (i.e., recordkeeping for emission calculations and submittal requirements for 112(j)).

A typographical correction was made to remove orphaned requirements. These requirements did not have a subject item listed in the permit, because the group (GP009) to which they originally belonged was removed by a previous permit action.

## **2. Technical Information**

### **2.1 Equipment Changes**

#### Equipment Removed

EU041 – Bldg B Boiler 1  
EU084 – Building B Bay 3 Heater  
EU085 – Building B Bay 3 Heater  
EU086 – Building B Bay 4 Heater  
EU087 – Building B Bay 4 Heater  
EU088 – Building B Bay 5 Heater  
EU089 – Building B Bay 5 Heater

#### Equipment Renamed

EU090 is now Building B Hangar 8 Heater (used to be Building B Bay 6 Heater)  
EU091 is now Building B Hangar 8 Heater (used to be Building B Bay 6 Heater)  
EU092 is now Building B Hangar 7 Heater (used to be Building B Bay 7 Heater)  
EU093 is now Building B Hangar 7 Heater (used to be Building B Bay 7 Heater)

### **2.2 Facility Emissions**

There are no emission increases associated with this permit action.

The Potential to Emit (PTE) data was updated in Delta through removal of emission units and deletion of their related emission data.

In previous permit actions, annual limits were taken to avoid classification as a major source under 40 CFR § 52.21 for Volatile Organic Compounds (VOC), Nitrogen Oxides (NO<sub>x</sub>) and Sulfur Dioxide (SO<sub>2</sub>). These limits, listed in Table 2, remains the same since the unlimited PTE for these pollutants continues to be much higher than the existing limits.

### **2.3 Insignificant Activities**

Northwest Airlines has several operations which are classified as insignificant activities. These are listed in Appendix D to the permit. There are no changes to insignificant activities through this permit action.

## **3. Conclusion**

Based on the information provided by Northwest Airlines, Inc., the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 05300010-003 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:      Sarah Sevcik (permit writer/engineer)  
   Brent Rohne (enforcement)  
   Chris Buntjer (peer reviewer)

Attachments: 1. Facility Description and CD-01

AQ File No. 343A; DQ 2316