

**WASHINGTON STATE DEPARTMENT OF ECOLOGY
P.O. BOX 47600
OLYMPIA, WASHINGTON 98504**

IN THE MATTER OF:]	
]	NO. PSD-05-02
Boeing Commercial Airplane Group]	
Everett Facility]	FINAL APPROVAL OF
3003 West Casino Road]	PREVENTION OF SIGNIFICANT
Everett, WA 98203]	DETERIORATION

Pursuant to the federal Prevention of Significant Deterioration (PSD) regulations, 40 Code of Federal Regulations (CFR) 52.21, and the Washington State Department of Ecology (Ecology) general regulations for air pollution sources, Chapter 173-400 Washington Administrative Code (WAC), Ecology now finds the following:

FINDINGS

1. The Boeing Commercial Airplane Group (Boeing) has applied to make changes at its Everett facility to accommodate production of a new model airplane (787) in Everett, Washington.
2. A PSD application was submitted on March 30, 2005. Supplemental information was received on April 12, 2005, May 3, 2005, May 25, 2005, June 7, 2005, and August 4, 2005. Ecology determined the application to be complete on June 27, 2005.
3. Boeing’s Everett Facility (Boeing Everett) is located in the City of Everett in Snohomish County, Washington. The Everett facility is situated in the south half of Section 10, and the north half of Section 15, Township 28N, Range 4E, Willamette Meridian.
4. The facility is located in a Class II Area that is designated as “attainment or unclassified” for the purpose of PSD permitting for all pollutants. The distances to the nearest Class I Areas are shown in the following table:

Class I Area	Distance in (km) and Direction
Glacier Peak Wilderness Area	70 km East
Alpine Lakes Wilderness Area	60 km Southeast
North Cascades National Park	108 km Northeast
Olympic National Park	91 km West
Mount Rainier National Park	123 km Southeast
Goat Rocks Wilderness Area	205 km Southeast
Mount Baker Recreation Area	93 km North

5. The proposed project consists of assembling new Model 787 airplanes. There are three separate production operations: In Interiors Manufacturing, stow bins, crew rests,

partitions/class dividers, closets, and other miscellaneous items will be fabricated and coated. In Final Assembly, the operations include, but are not limited to, joining the body sections into a complete fuselage, attaching the wings, vertical fin and horizontal stabilizers, installing the engines, wing-to-body fairings, landing gear, doors, auxiliary power system, and interiors, and performing functional testing. Once the final assembly has been completed, the airplane will be moved to a paint hangar on site for Final Exterior Coating (if necessary). This permit limits VOC emissions from each of the three production operations individually. This permit allows for the location or relocation of 787 operations anywhere within the Boeing Everett facility as long as all of this permit's approval conditions are satisfied.

6. The Boeing facility qualifies as a major source because it emits more than 250 tons per year of volatile organic compounds (VOC).
7. Boeing estimates that this project will result in an increase of approximately 287 tons per year of VOC. Since the Significant Emission Rate (SER) for VOC is 40 tons per year, the project is subject for PSD review for emissions of VOC. Boeing elected not to calculate and submit contemporaneous emissions changes.
8. VOC emissions expected from Model 787 assembly and allowed from the indicated airplane manufacturing operations at Boeing-Everett under this permit are shown in the table below:

Operations/Location	Proposed 787 Project Emissions (tons per year)	Allowed Emissions (tons per year)
Paint Hangar Final Exterior Coating	177	412
787 Final Assembly	49	49
Interiors Manufacturing	61	205
Total	287	666

9. Emission increases of regulated pollutants that are not subject to PSD permitting are considered by Puget Sound Clean Air Agency under their new source review rules.
10. A Best Available Control Technology (BACT) review was not required because Ecology determined that there was no physical change, or change in the method of operation, that causes, or results, in an emissions increase. Model 787 assembly will be accomplished by increased utilization of existing emission units.
11. Boeing is subject to the National Emission Standards for Hazardous Air Pollutants: 40 CFR 63 Subparts GG and WWWW.
12. A PSD increment consumption analysis was not required because the 787 program would not cause a significant net emission increase in emissions of any pollutant for which there is a PSD increment.

13. Proposed emissions will not significantly cause or contribute to an exceedance of any National Ambient Air Quality Standards (NAAQS) as shown in the following table:

Pollutant	Averaging Period	NAAQS	Maximum Increase in Concentration due to the 787 Project	Significant Contribution to an Exceedance of NAAQS? (Y or N)
Ozone	1-hour	0.12 (ppm)	0.000120 (ppm)	N
	8-hour	0.080 (ppm)	0.000120 (ppm) ¹	N

14. The project is not expected to contribute significantly to visibility impairment, deposition loadings, or cause harm to any air quality related value at any Class I area.

15. The project will not have a noticeable effect on industrial, commercial, or residential growth in the Everett area.

16. Based upon the Technical Support Document prepared on August 22, 2005 and the application, Ecology finds that all requirements for PSD have been satisfied and the project will comply with all applicable federal NSPS. Approval of the PSD application is granted subject to the following conditions:

APPROVAL CONDITIONS

1. Boeing-Everett's requirements in the following approval conditions to notify or report to or acquire approval or agreement from "Ecology and the Puget Sound Clean Air Agency" may be satisfied by providing such notification, reporting, or approval request to the Puget Sound Clean Air Agency if the approval conditions of this PSD permit have been incorporated in Boeing-Everett's Title V permit (Chapter 173 401 WAC).

Emission Limits

2. Paint Hangar Final Exterior Coating:
 - 2.1. Paint hangar final exterior coating includes the following processes as applied to airplane exterior surfaces that occur in the paint hangars: surfaces preparation, including temporary protective coating removal, manual or chemical abrading, chemical conversion coating, cleaning and reactivation of existing coatings; coating application including the application of primers, intermediate coats, tie-coats, top-coats, and other aerospace coatings; de-painting and processes normally associated with aircraft cleaning and coating.
 - 2.2. Boeing-Everett may include additional processes related to airplane exterior coating to those listed in Condition 2.1 under Paint Hangar Final Exterior Coating with prior written approval from Ecology and Puget Sound Clean Air Agency.
 - 2.3. VOC emissions from Paint Hangar Final Exterior Coating shall not exceed 412 tons in any 12 consecutive months.

¹ It is likely that the 8-hour ozone concentration is actually lower than reported.

3. 787 Final Assembly:

- 3.1. 787 Final Assembly consists of all 787 manufacturing operations that occur in the 787 Final Assembly area. These operations include joining the airplane body sections into a complete fuselage; integration of flight control surfaces and raked tip to wings; joining the wings, vertical fin, and horizontal stabilizers to the fuselage; hanging the engines; installing the wing-to-body fairings, landing gear, doors, auxiliary power system, other aircraft systems (e.g., electrical, hydraulic, fuel), and interiors; part assemble; rework; testing; and processes normally associated with aircraft Final Assembly.
- 3.2. Boeing-Everett may include additional processes related to 787 manufacturing operations similar to those listed in Condition 3.1 under Final Assembly with prior written approval from Ecology and Puget Sound Clean Air Agency.
- 3.3. VOC emissions from 787 Final Assembly shall not exceed 49 tons in any 12 consecutive months.

4. Interiors Manufacturing:

- 4.1. Interiors Manufacturing includes all operations associated with manufacturing stow bins, crew rests, partitions/class dividers, closets, ceilings and sidewall panels, doors and door way liners, and other airplane interior components, and processes normally associated with aircraft Interiors Manufacturing.
- 4.2. Boeing-Everett may include additional processes related to the manufacture and assembly of components similar to those listed in Condition 4.1 under Interiors Manufacturing with prior written approval from Ecology and Puget Sound Clean Air Agency.
- 4.3. VOC emissions from Interiors Manufacturing shall not exceed 205 tons in any 12 consecutive months.

Compliance Monitoring

5. VOC's are defined in 40 CFR 51.100(s).

6. Boeing shall monitor compliance with Approval Conditions 2.3, 3.3, and 4.3 by:

- 6.1. Separately quantifying for Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing the VOCs of each VOC-containing material used each calendar month, and calculating the corresponding totals over the previous twelve months.

Example: For Paint Hangar Final Exterior Coating, the calculation will show each VOC containing material used in a given month and the corresponding VOC total.

- 6.2. Boeing will determine VOC content from the corresponding Material Safety Data Sheets (MSDS's) or other manufacturer-supplied data.
- 6.3. Boeing may deduct from the total calculated pursuant to Condition 6.1:
 - 6.3.1. Any VOCs that are included in the coating formulation as reactive components to the extent that they are incorporated into the final, cured airplane coating as verified by the coating vendor documentation.

- 6.3.2. Any VOCs recovered for off-site recycle or disposal or discharged from Boeing Everett to waste water or solid waste from materials used in Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing.

Recordkeeping, Notification, and Reporting

7. Boeing shall keep the following records beginning in the first month of 787 manufacturing operations at the site:
 - 7.1. The calculations and results pursuant to Condition 6.1.
 - 7.2. An annually updated list of all VOC-containing material used in Paint Hangar Final Exterior Coating, 787 Final Assembly and Interiors Manufacturing within the immediate past twelve months.
 - 7.3. For materials containing VOCs that were deducted pursuant to Condition 6.3.1, vendor documentation verifying the quantity of reactive VOCs incorporated into the final, cured airplane coating.
 - 7.4. For VOCs that were deducted pursuant to Condition 6.3.2, inventory records verifying the quantity of VOCs recovered for off-site recycle or disposal or discharged from Boeing Everett to waste water or solid waste from materials used in Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing.
 - 7.5. Records shall be retained for not less than five years after their origination.
 - 7.6. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site.
 - 7.7. Records shall be available to Ecology and the Puget Sound Clean Air Agency within ten days of request.
8. Boeing shall report annually to Ecology and the Puget Sound Clean Air Agency:
 - 8.1. The types and corresponding monthly and rolling twelve month quantities of VOC-containing materials used in each of Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing.
 - 8.2. The quantity of VOCs in the VOC-containing materials reported pursuant to Condition 8.1.
 - 8.3. For VOCs that were deducted pursuant to Condition 6.3.1 the monthly and rolling twelve month quantity of reactive VOCs incorporated into the final, cured airplane coating in each of Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing.
 - 8.4. For VOCs that were deducted pursuant to Condition 6.3.2 the monthly and rolling twelve month quantity of VOCs recovered for off-site recycle or disposal or discharged from Boeing Everett to waste water or solid waste from materials used in Paint Hangar Final Exterior Coating, 787 Final Assembly, and Interiors Manufacturing.
9. Prior to incorporation of the approval conditions of this PSD permit into Boeing's Title V permit (40 CFR Part 70), each occurrence of VOC emissions measured in excess of the limit specified in Approval Conditions 2.3, 3.3, and 4.3:

- 9.1. Shall be reported in writing to Ecology and the Puget Sound Clean Air Agency in accordance with WAC 173-400-107(3).
- 9.2. As used in WAC 173-400-107(3), "as soon as possible" shall mean in no case later than twelve hours after the deviation is discovered.
- 9.3. Such reports shall include:
 - 9.3.1. As a minimum:
 - 9.3.1.1. The time of the occurrence.
 - 9.3.1.2. Magnitude of excess from the emission limit.
 - 9.3.1.3. The duration of the excess.
 - 9.3.1.4. Any agency contacted.
 - 9.3.2. Upon request by Ecology or the Puget Sound Clean Air Agency:
 - 9.3.2.1. The probable cause.
 - 9.3.2.2. Corrective actions taken or planned.
10. After incorporation of the approval conditions of this PSD permit into Boeing's Title V permit (40 CFR Part 70), each occurrence of VOC emissions measured in excess of the limit specified in Approval Conditions 2.3, 3.3, or 4.3 shall be reported in writing to the Puget Sound Clean Air Agency as required by the Title V permit in accordance with WAC 173-401-615(3)(b).

Standard Requirements

11. Nothing in this determination shall be construed so as to relieve the company of its obligations under any state, local, or federal laws or regulations.
12. Access to Boeing-Everett by the U.S. Environmental Protection Agency (EPA), Ecology, and state or local regulatory personnel shall be permitted upon request for the purpose of compliance assurance inspections. Failure to allow access is grounds for an enforcement action under the federal Clean Air Act or the Washington State Clean Air Act.
13. This approval shall become invalid if construction of the project is not commenced within eighteen (18) months after receipt of the final approval, or if construction of the facility is discontinued for a period of eighteen (18) months, unless Ecology extends the 18 month period, pursuant to 40 CFR 52.21(r)(2) and applicable EPA guidance.
14. The effective date of this permit shall not be earlier than the date upon which the US EPA notifies Ecology that the US EPA has satisfied its obligations, if any, under Section 7 of the Endangered Species Act 16 U.S.C. § 1531 et seq., 50 C.F.R. Part 402, subpart B (Consultation Procedures) and Section 305(b)(2) of the Magnuson-Stevens Fishery and Conservation Act 16 U.S.C. § 1801 et seq., 50 C.F.R. Part 600, subpart K (EFH Coordination, Consultation, and Recommendations).
15. For federal regulatory purposes and in accordance with 40 CFR 124.15 and 124.19: If there was a public comment requesting a change in the preliminary determination or a proposed permit condition during the public review and comment period, the effective date of this

permit shall not be earlier than 30 days after service of notice to the commenters and applicant on the preliminary determination.

15.1. If a review of the final determination is requested under 40 CFR 124.19 within the 30-day period following the date of the final determination, the effective date of the permit is suspended until such time as the review and any subsequent appeal against the permit are resolved.

15.2. If there was no public comment requesting a change in the preliminary determination or a proposed permit condition during the public review and comment period, this permit is effective upon the date of finalization subject to consideration of Condition 14 (EPA's ESA requirement), above.

Reviewed by:

Richard B. Hibbard, P.E.
Technical Services Section
Air Quality Program

Date

Approved by:

Stuart A. Clark, Manager
Air Quality Program
Washington State Department of Ecology

Date

Ecology was notified by the US EPA that the US EPA has satisfied its obligations under the Endangered Species and Magnuson-Stevens Acts relative to PSD Permit 05-02 issued to Boeing Commercial Airplane Group on:

9/12/05
Date of USEPA Notification

Stuart A. Clark, Manager
Air Quality Program
Washington State Department of Ecology