

WASHINGTON DEPARTMENT OF ECOLOGY
P.O. Box 47600
Olympia, Washington 98504-7600

IN THE MATTER OF:)	
)	
BP Cherry Point Refinery)	No. PSD-5, SECOND AMENDMENT
4519 Grandview Rd.)	PROPOSED APPROVAL OF
Blaine, WA 98230)	PSD APPLICATION

According to the regulations for Prevention of Significant Deterioration (PSD) set forth in WAC 173-403-080 and pursuant to the information submitted by ARCO Petroleum Products Company of July 1985, August 28, 1985, and September 19, 1985, the technical analysis performed by the Department of Ecology (the department), dated October 17, 1985, and the request for this amendment from BP West Coast Products, LLC on July 28, 2008, the department now finds the following:

FINDINGS

1. BP West Coast Products, LLC (BP, formerly British Petroleum) operates a petroleum refinery in Ferndale Washington formerly owned by ARCO Petroleum Products Co. (ARCO), and known as the BP Cherry Point Refinery.
2. Pursuant to the original PSD permit (1985), ARCO Petroleum Products Company modified operation of the existing north vacuum heater to attain 77 million British thermal units per hour heat output. The vacuum heater is located in the BP Cherry Point Refinery near Ferndale, Washington.
3. It is located in an area which has been designated Class II for the purposes of PSD evaluation, and is approximately 80 kilometers from the boundary of the nearest Class I area. The area is in attainment with all state and national ambient air quality standards (AAQS).
4. The project qualified as a major modification to a major source because Ecology granted delay of installation of the staged-burner NO_x controls. Without the staged-burner controls, NO_x emissions were 66 tons per year.
5. Approval Condition 3 of the original PSD-5 provided that BP must install the staged-burner NO_x controls by the indicated deadline or demonstrate 28 tons per year offsets in NO_x emissions within one year. On December 10, 1986, Ecology recognized the March 18, 1986 regulatory order to BP from the Northwest Clean Air Agency as satisfaction of offsetting NO_x emission reductions. The related elements of Approval Condition 3 of and associated references in the original PSD-5 are now defunct, and are removed in this amendment.
6. In this amendment, BP requested that the heater firing rate limit be measured as a 30-day rolling average to account for necessary variations in the heater's operating conditions. This is a relaxation from the original hourly average.
7. The modification was limited by the PSD permit to the following air pollutant emissions:

Air Pollutant	Pounds per million	Tons per year
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British thermal units

Carbon monoxide (CO):	0.028	9.5
Nitrogen oxides (NO _x)	0.19	66
Hydrocarbons (HC)	0.0024	0.83
Sulfur dioxide (SO ₂):	0.0005	0.16
Particulate matter (PM):	0.0024	0.83

5. Only NO_x emissions are subject to PSD review.
6. Maintenance of low excess air in the combustion zone, and the application of staged fuel low-NO_x burners are best available control technology for this application. Staged fuel burners gave over 70 percent control compared to emissions from standard burners. However, satisfaction of the NO_x emission offsets referred to in Finding 5 abrogated BP's installation of staged fuel low-NO_x burners.
7. The ambient air quality impacts of the proposed emissions were determined with the use of the EPA Industrial Source Complex Long-Term (ISCLT) model. The highest impact predicted was less than 1 microgram nitrogen dioxide (NO₂) per cubic meter of air, approximately one kilometer due north of the source. Consideration of the combined impact of the proposed emissions, total NO_x emissions from the refinery, and other NO_x sources in the area indicated that the national and state ambient air quality standard of 100 micrograms of NO₂ per cubic meter of air will not be exceeded.
8. Air emissions from the proposed project will not result in damage to soils or vegetation, nor result in any measurable degradation of visibility nor increase in acid deposition.
9. The impact of the proposed project's emissions upon any Class I area will be imperceptible.
10. The department finds that all requirements for PSD have been satisfied. Approval of the PSD application is granted subject to the following conditions.

APPROVAL CONDITIONS

1. Emissions from the north vacuum heater shall not exceed any of the following limitations:
 - 1.1 14.6 pounds per hour of NO_x (one-hour average, quantified as NO₂).
 - 1.2 66 tons in any twelve consecutive months..
2. Firing of the north vacuum heater shall not exceed 77 million Btu per hour (higher heating value, 30-day rolling average).
3. A continuous oxygen monitor shall be operated on the heater in accordance with Performance Specification 3 (40 CFR 60, Appendix B). Oxygen monitoring records shall be kept on site by BP for two years and made available to the air authorities for inspection.
4. Hydrogen sulfide (H₂S) shall not exceed 160 parts per million dry volume basis (ppmdv) in the fuel to the vacuum heater, based on a three-hour rolling average, or 90 ppmdv on a 30-day rolling average.
5. A continuous H₂S monitor shall be installed on the fuel feed line and operated according to Performance Specification 2 (40 CFR 60, Appendix B) within 180 days of receipt of final approval. H₂S records shall be kept for a minimum of two years, and made available for inspection to the air authorities.
6. Compliance with Approval Condition 1 shall be determined by an annual compliance test for NO_x using EPA Reference Method 7E (40 CFR 60, Appendix A). The compliance test shall use

not less than 3 one-hour test runs to determine the emission factor. The compliance test report shall be sent to the department within 45 days after the test. Once the conditions of the PSD Permit are incorporated into the facility's Title V Air Operating Permit, reports shall be sent to the agency issuing the Title V Permit and no longer need to be sent to Ecology.

7. This approval shall become void if the initial operation modification is not completed within eighteen (18) months after receipt of this approval or if operation of this unit is discontinued for a period of eighteen (18) months after receipt of this approval.
8. Any activity which is undertaken by the company or others, in a manner which is inconsistent with this determination shall be subject to department enforcement under applicable regulations. Nothing in this determination shall be construed to relieve the company of its obligations under any state, local, or federal laws or regulations.
9. The company shall notify the department and the Northwest Air Pollution Authority in writing of the completion of this modification within thirty (30) days of their occurrence.
10. Access to the source by EPA, state or local regulatory personnel shall be permitted upon request for the purpose of compliance assurance inspections. Failure to allow such access is ground for revocation of this permit.

Reviewed by:

Bernard Brady, P.E.
Technical, Information, and Engineering Services
Air Quality Program
Washington State Department of Ecology

DATE: _____

Approved by:

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

DATE: _____