

**ENERGY FACILITY SITE EVALUATION COUNCIL
P.O. BOX 43172
OLYMPIA, WASHINGTON 98504-3172**

| | | |
|---|--|--------------------------------------|
| IN THE MATTER OF: | | NO. EFSEC/2002-01 Amendment 1 |
| BP Cherry Point Cogeneration Project | | DRAFT APPROVAL |
| BP West Coast Products, LLC | | NOTICE OF CONSTRUCTION |
| Whatcom County, Washington | | AND PREVENTION OF |
| | | SIGNIFICANT DETERIORATION |

Pursuant to the Energy Facility Site Evaluation Council (EFSEC) Permit Regulations for Air emissions permits and authorizations (Washington Administrative Code (WAC) 463-60-536(1)), the Washington Department of Ecology (Ecology) regulations for new source review Chapter 173-400 WAC and Chapter 173-460 WAC, the federal Prevention of Significant Deterioration (PSD) regulations Code of Federal Regulations (CFR) Title 40 Subpart 52.21, and based upon the Notice of Construction Application (NOC) submitted by BP West Coast Products, LLC (BP) on June 10, 2002, supplemental information submitted on July 3, 2002, and August 29, 2002, the April 2003 revised application, the June 2006 NOC/PSD amendment application, and the technical analysis performed by Ecology for EFSEC, EFSEC now finds the following:

FINDINGS

1. BP West Coast Products, LLC (BP) is permitted to build a 720 megawatt (MW) natural gas fired, combined cycle combustion three gas turbine/one steam turbine cogeneration facility (3x1 or 720 MW Project) on 33 acres of land adjacent to the BP Cherry Point Refinery (Refinery). The Project is located in Whatcom County approximately 6 miles (9.6 km) northwest of Ferndale and 7 miles (11 km) southeast of Blaine, Washington. The coordinates are UTM 10 520300E and 5415000N. The permit became effective on June 21, 2005. BP has not commenced construction on this project.
2. BP now seeks to amend the PSD permit to allow for the construction of an alternate design that generates between 520 and 570 MW using a two gas turbine/one steam turbine configuration. The 520 MW Project would reduce the number of combustion turbines by one compared to the 720 MW project, but each turbine would have larger duct burners in its heat recovery steam generator (HRSG). Table 1 compares key components of the original and new proposals.

Table 1: Comparison of the currently permitted (720 MW) and alternative (520 MW) Projects

| Facility Design | 3x1 720 MW Project | 2x1 520 MW Project |
|---|--|--|
| Maximum Electrical Output | 720 MW | 520-570 MW |
| Type of service | Base load year round | Base load year round |
| Electricity to Refinery | 85 MW | 100 MW |
| Steam to Refinery | 770,000 lbs per hour (max.) 510,000 lbs per hour (avg.) | 1,200,000 lbs per hour (max.) 510,000 lbs per hour (avg.) |
| Gas Turbines | Three GE 7FA | Two GE 7FA, or Two Siemens SGT6-5000F |
| Number of HRSGs | Three | Two |
| Duct Burner maximum firing rate | 315 MMBtu/Hr total (105 MMBtu/Hr each) | 900-1200 MMBtu/Hr total (450-600 MMBtu/Hr each) |
| Duct Burner fuel | Natural Gas | Natural Gas or Refinery Fuel Gas Treated to Equivalent Sulfur Specification |
| Form of Ammonia for NO _x control | Anhydrous | Aqueous |
| Steam turbine and generator | 243 MW | Steam turbine with about 200 MW electrical generator |
| Emergency Generator | 1,500 kW diesel fueled | About 1,500 kW, diesel fueled |
| Firewater pump | 265 hp diesel fueled | About 265 hp, diesel fueled |
| Cooling tower | Multi-cell cooling tower | Multi-cell cooling tower |

3. The combustion turbine will be fueled by natural gas. The duct burners in the HRSG will be fueled by natural gas or refinery fuel gas. Use of refinery fuel gas fuel will not be allowed until a continuous emission monitor for sulfur dioxide (SO₂) has been installed on the affected HRSG's exhaust stack.
4. On-road specification diesel will be the only fuel for the emergency generator and firewater pump.
5. The Project will use a water cooled steam condensation system.
6. The Project is subject to permitting requirements under the federal requirements of 40 CFR 52.21 as a fossil fuel fired steam electric generator, one of 28 listed industries that becomes a "major source" when emitting more than 100 tons per year (tpy) of any regulated pollutant. The Project has the potential to emit Prevention of Significant Deterioration (PSD) significant quantities of nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), sulfuric acid mist (H₂SO₄), particulate matter (PM), particulate matter less than 10 micrometers (PM₁₀), and volatile organic compounds (VOC).
7. The Project is subject to emission limitation, monitoring and reporting requirements of New Source Performance Standards (NSPS) 40 CFR 60 Subpart KKKK, Chapter 173-400 WAC, 40 CFR 60 Appendices A, B, and F, and 40 CFR 75; and to gas fuel monitoring requirements under 40 CFR 60 Subpart KKKK and 40 CFR Part 75 Appendix D.
8. Ammonia (NH₃) emissions from the Project are subject to permitting under the requirements of WAC 463-78-005(1) and 005(4), which adopt Chapters 173-400 and 173-460 WAC respectively.
9. The Project is subject to 40 CFR Part 70 and is required to file a Title V air operating permit application within 12 months after the facility operations commence.
10. Best available control technology (BACT) as required under 40 CFR 52.21(j) and WAC 173-113(2), and toxic best available control technology (T-BACT) as required under WAC 173-460-040(4) will be used for the control of all air pollutants which will be emitted by the Project. The following table lists the Project's potential emissions and the turbine BACT control technologies.

Table 2. Project Emissions and Turbine BACT Control Technology

| Pollutant | Project Potential to Emit tons per year, (tpy) | Turbine BACT Control Technology |
|---|---|---|
| Nitrogen Oxides (NO _x) | 220.3 | Selective Catalytic Reduction (SCR) plus lean premix dry low NO _x turbine burners and low NO _x duct burners |
| Carbon monoxide (CO) | 158.4 | Oxidation catalyst plus lean premix turbine burners |
| Sulfur dioxide (SO ₂) | 51.1 | Natural gas fuel |
| Sulfuric acid mist (H ₂ SO ₄) | 30.0 | Natural gas fuel |
| Volatile organic compounds (VOC) | 58.4 | BACT same as CO |
| Particulate matter (PM) and Particulate matter less than 10 microns (PM ₁₀) | 262.0 | Natural gas fuel |
| Ammonia (NH ₃) | 129.1 | 5 ppm ammonia slip |

11. BACT for the emergency generator and firewater pump engines is that the engine be new and meet the 40 CFR 89 federal engine standards for the year of engine purchase, use of diesel fuel that meets the sulfur content specification of on road diesel fuel at the time of fuel purchase, and operation of no more than 250 hours per year for each unit.
12. BACT for the cooling tower is installation of a demister guaranteed to have a drift loss of 0.0005% or less of the recirculating water flow rate.

13. The Project site is located within a Class II area that is currently designated in attainment for all national and state air quality standards
14. Allowable emissions from the new emissions units will not cause or contribute to air pollution in violation of:
 - 14.1. Any state or national ambient air quality standard;
 - 14.2. Any applicable PSD increment. Table 3 indicates the maximum Class I and Class II increment consumed by this Project.

Table 3: Increment Impact Summary

| Pollutant | Maximum Ambient Class I Area Impact | | Class I Area Allowable Increment ($\mu\text{g}/\text{m}^3$) | Maximum Ambient Class II Area Impact ($\mu\text{g}/\text{m}^3$) | Class II Area Allowable Increment ($\mu\text{g}/\text{m}^3$) |
|----------------------------------|-------------------------------------|--------------------------|---|---|--|
| | Class I Area With Maximum Impact | $\mu\text{g}/\text{m}^3$ | | | |
| Sulfur dioxide | | | | | |
| Annual | Alpine Lakes Wilderness | 0.001 | 2 | 0.03 | 20 |
| 24-Hour | Olympic National Park | 0.021 | 5 | 4.3 | 91 |
| 3-Hour | Olympic National Park | 0.048 | 25 | 8.4 | 512 |
| Particulate (PM_{10}) | | | | | |
| Annual | Alpine Lakes Wilderness | 0.0054 | 4 | 0.25 | 17 |
| 24-Hour | Olympic National Park | 0.087 | 8 | 4.0 | 30 |
| Nitrogen Dioxide | | | | | |
| Annual | Alpine Lakes Wilderness | 0.0053 | 2.5 | 0.8 | 25 |

15. The emissions of toxic air pollutants from this facility will not exceed any acceptable source impact level (ASIL) established under WAC 173-460-150 or 160.
16. Ambient Impact Analysis indicates the Project will have no adverse impact from pollutant deposition on soils and vegetation in the following Class I areas: the North Cascades National Park (50 miles east of the site), the Glacier Peak Wilderness Area (71 miles southeast), the Pasayten Wilderness Area (81 miles east), and the Alpine Lakes Wilderness Area (105 miles southeast). The Federal Land Managers (FLMs) use a 5% visibility impact as their threshold for possible concern. A 6% visibility impact was predicted for the Olympic National Park (66 miles southwest) on one day per year. The National Park Service considered this acceptable.
17. Ambient Air Quality modeling indicates that projected concentrations of pollutants will be below levels that require further impacts analysis or air monitoring. Since the turbine annual NO_x emissions are greater than 100 tpy, an ozone impacts analysis was done. Ozone modeling indicated that the maximum increased impacts expected would range from 0.2 to 0.6 parts per billion (ppb). This was determined to be acceptable by both Ecology and EPA.
18. Use of cogeneration steam is expected to result in some overall pollutant emissions reductions at the refinery. These refinery emission reductions are not relied upon for the cogeneration power plant's emissions impacts analysis or emissions permitting.
19. No significant effect on industrial, commercial, or residential growth in the Whatcom County area is anticipated due to the Project.
20. EFSEC finds that all requirements for new source review (NSR) and PSD are satisfied and that as approved below, the new emissions units comply with all applicable federal new source performance standards. Approval of the NOC/PSD application is granted subject to the following conditions:

APPROVAL CONDITIONS:

1. For the combustion gas turbine (CGT) and duct burner fuel:
 - 1.1. Natural gas shall be the only fuel for the CGTs.
 - 1.2. Natural gas or refinery gas shall be the only fuels for the duct burners.
 - 1.3. Compliance shall be monitored by written affirmation of the type of fuel burned in the combustion turbines and duct burners per Condition 17.
 - 1.4. Refinery gas fuel shall not be used until a continuous emission monitor (CEM) for SO₂ has been installed and is operational for the affected HRSG exhaust stack.
2. For the emergency generator and fire pump:
 - 2.1. On road specification diesel shall be the only fuel.
 - 2.2. Compliance shall be monitored by written affirmation from the fuel supplier.
3. The emergency generator shall:
 - 3.1. Not exceed NO_x emissions of 3.4 tons per year, 12 month rolling average.
 - 3.2. Be operated only as needed for its maintenance, for training, and for emergency power.
 - 3.3. Not exceed 250 hours operation in any consecutive 12 month period.
 - 3.4. Meet applicable Federal new engine standards (40 CFR 89) for engines sold in 2006 or for the year of purchase which ever is later.
 - 3.5. Compliance with Condition 3.1 shall be by calculation of NO_x emissions using hours of operation and an emission factor approved by EFSEC. Until a factor is approved, the emission factor assumed for modeling is acceptable.
 - 3.6. Compliance with Conditions, 3.2 and 3.3 shall be monitored by installing and operating a nonresetable hour meter with monthly recording of the operating hour meter reading to determine the operating hours, or by automated data collection. The reason for operation shall be logged.
 - 3.7. NO_x and SO₂ emissions shall be calculated and reported using operating data such as hours of operation, NO_x emission factors, and fuel data. Reporting shall be per Condition 17.
 - 3.8. Compliance with Condition 3.4 shall be by initial certification of the engine manufacturer.
4. The fire pump shall:
 - 4.1. Be operated only as needed for its maintenance, for training, and for emergency fire suppression.
 - 4.2. Not exceed 250 hours operation in any consecutive 12 month period.
 - 4.3. Meet applicable new standards for new engines of its size sold in 2006 or in the year of purchase, which ever is later.
 - 4.4. Compliance with Conditions, 4.1, and 4.2 shall be by a log of hours of operation, reason for operation, and reported per Condition 17. SO₂ emissions shall be calculated and reported using fuel and operating data.
 - 4.5. Compliance with Condition 4.3 shall be by initial certification of the engine manufacturer.
5. The sulfur content of the diesel fuel must conform with the on-road diesel specification valid at the time of fuel purchase. At the time of issuance of this permit, this is defined in § 40 CFR 80.500

6. Nitrogen oxides (NO_x) emissions:
 - 6.1. NO_x emissions from each HRSG exhaust stack shall not exceed:
 - 6.1.1. 2.5 parts per million by volume, dry (ppmdv), three hour average, corrected to 15% oxygen (O₂).
 - 6.1.2. 12.0 kilograms per hour (kg/hr), (26.5 pounds/hour (lb/hr)) on a three hour average.
 - 6.2. Compliance shall be determined in accordance with 40 CFR 60 Subpart KKKK and EPA Reference Method 20, except that the instrument span shall be reduced appropriately for accuracy.
 - 6.3. Continuous compliance shall be monitored by continuous emission monitors for NO_x and O₂. The continuous emission monitoring system (CEMS) must meet the requirements of Approval Condition 16.1.
7. Carbon monoxide (CO) emissions:
 - 7.1. CO emissions from each HRSG exhaust stack shall not exceed:
 - 7.1.1. 2.0 ppmdv, three hour average, corrected to 15% oxygen (O₂).
 - 7.1.2. 5.9 kg/hr, (12.9 lb/hr) on a three hour average.
 - 7.2. Compliance shall be determined by use of EPA Reference Method 10, except that the instrument span shall be reduced appropriately for accuracy.
 - 7.3. Continuous compliance shall be monitored by continuous emission monitors for CO and O₂. The CEMS must meet the requirements of Approval Condition 16.2.
8. Particulate Matter (PM) and Particulate Matter less than or equal to ten microns (PM₁₀) shall be considered equal for this permit, and referenced and reported as PM₁₀.
 - 8.1. PM₁₀ emissions from each HRSG exhaust stack shall not exceed 13.2 kg/hr (29.2 lb/hr), filterable plus condensable, averaged over 24 hours.
 - 8.2. Compliance shall be determined by use of EPA Methods 5, 201, or 201A for filterable particulate, and Method 202 for condensable particulate, or equivalent methods agreed to in advance by EFSEC.
 - 8.2.1. Use of EPA Method 5 assumes all filterable particulate is PM₁₀.
 - 8.2.2. Use of Method 201 or 201A assumes that the mass of filterable PM is equal to the mass of filterable PM₁₀. The mass of particulate retained in the cyclone shall be determined and reported.
 - 8.3. Continuous compliance shall be demonstrated by an annual emissions test on a HRSG exhaust stack using the methods indicated in Condition 8.2. After 3 consecutive years of annual tests on each HRSG stack have demonstrated compliance, testing of each HRSG stack may be reduced to once every 5 years. If a test demonstrates noncompliance, a retest along with resumption of annual testing is required for the unit until 3 consecutive years demonstrate compliance.
 - 8.4. Routine emissions shall be determined using emission factors determined from source test data. If no source test data is available, emission factors approved by EFSEC shall be used until source test data can be developed.
9. Volatile organic compound (VOC) emissions:
 - 9.1. VOC emissions from each HRSG exhaust stack shall not exceed: 3.1 kg/hr, (6.9 lb/hr) averaged over 24 hours, reported as carbon equivalent.
 - 9.2. Compliance shall be determined by EPA Method 25A or 25B, or an equivalent method agreed to in advance by EFSEC.

- 9.3. Continuous compliance shall be demonstrated by an annual emissions test on each HRSG exhaust stack using the methods indicated in Condition 9.2. After 3 consecutive years of annual tests on a HRSG stack have demonstrated compliance, testing of each HRSG stack may be reduced to once every 5 years. If a test demonstrates noncompliance, a retest along with resumption of annual testing is required for that unit until 3 consecutive years demonstrate compliance.
 - 9.4. Routine emissions shall be determined using emission factors determined from source test data. If no source test data is available, emission factors approved by EFSEC shall be used until source test data can be developed.
10. Sulfur dioxide (SO₂) emissions:
- 10.1. SO₂ emissions from each HRSG exhaust stack shall not exceed 5.7 kg/hr (12.5 lb/hr) averaged over 24 hours.
 - 10.2. Compliance for each HRSG shall be determined by EPA Method 6, 6C, 8, or an equivalent method agreed to in advance by EFSEC.
 - 10.3. Continuous compliance shall be demonstrated by an annual emissions test on each HRSG exhaust stack using the methods indicated in Condition 10.2. After 3 consecutive years of annual tests on a HRSG stack have demonstrated compliance, testing of each HRSG stack may be reduced to once every 5 years. If a test demonstrates noncompliance, a retest along with resumption of annual testing is required for that unit until 3 consecutive years demonstrate compliance.
 - 10.4. Continuous compliance when combusting only natural gas shall be indicated by calculation of daily SO₂ emissions. This calculation may be based on daily fuel usage, daily fuel sulfur content determined by information supplied by the natural gas fuel supplier, odorant addition into the Ferndale pipeline, and any other applicable information approved by EFSEC. Conversion of SO₂ to H₂SO₄ may be estimated by information provided by the Method 8 stack tests required in Approval Condition 11.
 - 10.5. Continuous compliance when the fuel contains any portion of refinery gas shall be monitored by a continuous emission monitor for SO₂ on the affected HRSG exhaust stack. The continuous emission monitor system (CEMS) must meet the requirements of Approval Condition 16.4.
11. Sulfuric acid mist (H₂SO₄) emissions:
- 11.1. H₂SO₄ emissions from each HRSG exhaust stack shall not exceed 1.6 kg/hr (3.5 lb/hr) averaged over 24 hours.
 - 11.2. Compliance shall be determined by EPA Method 8, or an equivalent method agreed to in advance by EFSEC.
 - 11.3. Continuous compliance shall be demonstrated by an annual emissions test on each HRSG exhaust stack using the method indicated in Condition 11.2. After 3 consecutive years of annual tests on each HRSG stack have demonstrated compliance, testing of each HRSG stack may be reduced to once every 5 years. If a test demonstrates noncompliance, a retest along with resumption of annual testing is required for that unit until 3 consecutive years demonstrate compliance.
 - 11.4. Continuous compliance shall be indicated by calculation of daily H₂SO₄ emissions based on fuel usage and daily fuel sulfur content. Conversion of SO₂ to H₂SO₄ may be estimated by information provided by the Method 8 stack tests required in Approval Condition 11.2.
12. Cooling Tower:
- 12.1. Particulate emissions shall not exceed 6,440 kg/yr (7.1 tpy) 12 month rolling average, calculated monthly.
 - 12.2. Compliance shall be determined by methodology proposed to and approved by EFSEC prior to the operation of the cooling tower. The methodology may involve factors such as cooling tower recirculation rate, cooling tower total dissolved solids (TDS), fan operation effects, and

manufacturer's information on drift losses.

- 12.3. BP shall obtain an affirmative report by the cooling tower drift eliminator manufacturer, based on an onsite inspection of the completed installation, that its product has been installed in accordance with its specifications and has a drift loss of 0.0005% or less of the re-circulating water flow rate.
13. Within 90 days of initial startup, BP shall prepare Operating and Maintenance Manuals and an equipment Start-up, Shutdown, and Malfunction Procedures Manual for all equipment that has the potential to affect emissions to the atmosphere.
 - 13.1. The manuals shall be reviewed annually, and updated as needed. EFSEC shall be notified whenever the manuals are updated.
 - 13.2. Copies of the manuals shall be available to EFSEC or the authorized representative of EFSEC, or the EPA.
 - 13.3. Emissions that result from a failure to follow the requirements of the manuals may be considered credible evidence that emission violations have occurred.
14. Turbine Startup and Shutdown:
 - 14.1. Startup is defined as any operating period that is ramping up to normal operation (50%), and ends when the earlier of one of these events occurs:
 - 14.1.1. The turbine(s) are operating above 50% load, and normal operating temperatures have been reached in both the catalytic oxidation and selective catalytic reduction modules as indicated by the manufacturer's operating manual.
 - 14.1.2. One of the following time limits have been reached, as applicable:
 - 14.1.2.1. Five hours have elapsed since fuel was first introduced to the applicable turbine on a cold startup. A cold startup is any startup occurring after the applicable turbine has been shut down for seventy two hours or more.
 - 14.1.2.2. Three hours have elapsed since fuel was first introduced to the applicable turbine on a warm startup. A warm startup is any startup occurring after the applicable turbine has been shut down for more than eight but less than seventy two hours.
 - 14.1.2.3. Two hours have elapsed since fuel was first introduced to the applicable turbine on a hot startup. A hot startup is any startup occurring after the applicable turbine has been shut down for less than eight hours.
 - 14.2. Shutdown is defined as any operating period when the system is ramping down from normal operation. Normal operation is defined as operation between 50% and 100% turbine power generation capacity. Shutdown ends when the fuel feed to the system ceases.
 - 14.3. All turbine emissions during startups and shutdowns shall be counted towards annual mass emissions.
 - 14.4. Emission limits for NO_x during startup and shutdown:
 - 14.4.1. For purposes of compliance with NO_x emission limits, startup or shutdown operation exists only when the turbines are operating below 50% load or when the selective catalytic reduction system is below the normal operating temperature range indicated by the manufacturer's operating manual. Time in startup mode is limited by Condition 14.1.2.
 - 14.4.2. The limit on the three hour average NO_x concentration and daily NO_x mass emissions from each HRS_G stack exhaust are relieved.
 - 14.4.3. The continuous emissions monitor (CEM) for NO_x shall be operated during startup and shutdown periods. If the CEM cannot effectively measure emissions during startup, factors acceptable to EFSEC shall be substituted. Emission factors used for the permit application

preparation are acceptable initially.

14.5. Emission limits for CO during startup and shutdown:

- 14.5.1. For purposes of compliance with CO emission limits, startup or shutdown operation exists only when the turbines are operating below 50% load or when the catalytic oxidation system is below the normal operating temperature range indicated by the manufacturer's operating manual. Time in startup mode is limited by Condition 14.1.2.
- 14.5.2. The limits on the three hour average CO concentration and mass emissions from each HRSG stack exhaust are relieved.
- 14.5.3. The continuous emissions monitor (CEM) for CO shall be operated during startup and shutdown periods. If the CEM cannot effectively measure emissions during startup, factors acceptable to EFSEC shall be substituted. Emission factors used for the permit application preparation are acceptable initially.

14.6. Emission limits for VOC during startup and shutdown:

- 14.6.1. For purposes of compliance with VOC emission limits, startup or shutdown operation exists only when the turbines are operating below 50% load or when the catalytic oxidation system is below the normal operating temperature range indicated by the manufacturer's operating manual. Time in startup mode is limited by Condition 14.1.2.
- 14.6.2. The limits on twenty four hour average VOC concentration and mass emissions are relieved.
- 14.6.3. VOC emissions shall be estimated using an emission factor. An initial factor of thirty (30) pounds/hour/turbine may be used until a more representative factor is determined by testing or other reputable sources approved by EFSEC.

14.7. During each turbine's initial start up and commissioning after construction, excess emissions shall be reported and justified. Justified excess emissions shall not be considered violations or be counted toward annual emission limits. This initial commissioning period ends upon successful completion of initial performance testing or 180 days after initial startup of the turbine, which ever is first.

15. Annual emissions shall not exceed the limits in the following table. The annual limits are 12 month rolling totals calculated each month, using the procedure approved for monitoring continuous compliance for the pollutant.

| Unit | NO _x | CO | PM ₁₀ | SO ₂ | VOC |
|------------------------|------------------|-----------------|------------------|-----------------|-----------------|
| Each CTG/HRSG, tons/yr | 108.3 | 78.8 | 127.4 | 25.5 | 29.1 |
| Cooling Tower, tons/yr | na ¹ | na ¹ | 7.1 | na ¹ | na ¹ |
| Emergency Generator | 3.4 ² | na ¹ | na ¹ | na ¹ | na ¹ |

- 1. na means "not applicable." The cooling tower has no NO_x, CO, SO₂, or VOC emissions.
- 2. The emergency generator's NO_x emissions are the only emissions from the generator or the firewater pump estimated to be more than one ton per year.

16. Continuous Emission Monitoring Systems (CEMS):

- 16.1. CEMS for NO_x and O₂ compliance shall meet the requirements contained in 40 CFR 75, Emissions Monitoring.
- 16.2. CEMS for CO shall meet the requirements contained in 40 CFR, Part 60, Appendix B, Performance Specification 4 or 4A, and 40 CFR, Part 60, Appendix F, Quality assurance Procedures.
- 16.3. Use of velocity factors from 40 CFR, Part 60, Method 19 will satisfy the requirements for

- determining exhaust gas flow rate or velocity compliance contained in 40 CFR 75, Emissions Monitoring.
- 16.4. CEMS for SO₂ compliance shall meet the requirements contained in 40 CFR 75, Emissions Monitoring.
17. CEMS and process data shall be submitted quarterly, in written form (or electronic if permitted by the EFSEC) within thirty days of the end of each calendar quarter to EFSEC, its authorized representative (if any), and to the EPA Region X Office of Air Quality. A different schedule may be approved by EFSEC.
18. The format of the reporting described in Approval Condition 17 shall match that required by EPA for demonstrating compliance with the Title IV Acid Rain program reporting requirements. Pollutants not covered by that format shall be reported in a format approved by EFSEC that shall include at least the following:
- 18.1. Process or control equipment operating parameters.
 - 18.2. The hourly maximum and average concentration or emission rate, in the units of the permitted limit, for each pollutant monitored.
 - 18.3. The duration and nature of any monitor down time.
 - 18.4. Results of any monitor audits or accuracy checks.
 - 18.5. Results of any required stack tests.
 - 18.6. Results of any other stack tests performed after the initial performance tests.
19. For each occurrence of monitored emissions in excess of the permitted limit, the quarterly emissions report shall include the following:
- 19.1. For parameters subject to monitoring and reporting under the Title IV Acid Rain program, the reporting requirements in that program shall govern excess emissions report content.
 - 19.2. For all other pollutants:
 - 19.2.1. The time of the occurrence.
 - 19.2.2. Magnitude of the emission or process parameters excess.
 - 19.2.3. The duration of the excess.
 - 19.2.4. The probable cause.
 - 19.2.5. Corrective actions taken or planned.
 - 19.2.6. Any agency contacted.
20. BP shall maintain monitoring records on site for at least five years.
21. Operating Records for Emitting Equipment:
- 21.1. Unless otherwise specified, operating records shall be information necessary to determine the operational status of the equipment. Specific parameters and acceptable ranges of those parameters shall be specified in the Operation and Maintenance Manual. Example operating record information includes, but is not limited to:
 - 21.1.1. Fuel type and quality.
 - 21.1.2. Fuel consumption during the period (hourly, monthly, etc.).
 - 21.1.3. Unit operating parameters such as:
 - 21.1.3.1. Exhaust temperature.
 - 21.1.3.2. Percent excess air.
 - 21.1.3.3. Output rate (pounds of steam/hour, kW output, etc.).
 - 21.1.3.4. Operating hours during the reporting period and cumulative for the year.

22. Within 180 days after initial start-up of each turbine, BP shall conduct performance tests for NO_x, CO, PM₁₀, VOC, SO₂, and H₂SO₄ on each combustion turbine.
 - 22.1. The performance tests shall be performed by an independent testing firm.
 - 22.2. A test plan shall be submitted for EFSEC's approval at least 30 days prior to the testing.
23. Initial start-up for determining the initial compliance testing, CEM system performance testing, and similar purposes is defined as the earlier of the following dates:
 - 23.1. Beginning of commercial operation, or
 - 23.2. 180 days after the first fire occurs.
24. BP shall notify EFSEC in writing at least thirty days prior to:
 - 24.1. Initial start-up of any permitted emissions unit for operational testing and manufacturer's certification purposes.
 - 24.2. Initial start up of the Project as in Condition 23.
 - 24.3. The date any emissions testing required by this permit will be performed.
 - 24.4. The date(s) CEMS performance testing or Relative Accuracy Test Audits will be performed.
25. Sampling ports and platforms shall be provided on each stack, after the final pollution control device. The ports shall meet the requirements of 40 CFR 60 Appendix A, Method 20.
26. Adequate permanent and safe access to the test ports shall be provided. Other arrangements may be acceptable if approved by EFSEC prior to installation.
27. Any activity which is undertaken by the company or others in a manner which is inconsistent with the application and this determination shall be subject to EFSEC enforcement under the applicable regulations. Nothing in this determination shall be construed so as to relieve BP of its obligations under any state, local, or federal laws or regulations.
28. Access to the source, by EFSEC, the authorized representative of EFSEC, or the EPA, shall be permitted upon request for the purposes of compliance assurance inspections. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington Clean Air Act.
29. This approval shall become invalid if construction of the Project is not commenced within eighteen (18) months after receipt of final approval, or if construction of the facility is discontinued for a period of eighteen (18) months, unless EFSEC extends the 18 month period upon a satisfactory showing that an extension is justified, pursuant to 40 CFR 52.21(r)(2) and applicable EPA guidance.

This Prevention of Significant Deterioration Permit has been Prepared by:

Robert C. Burmark, P.E.
Technical, Information, and Engineering Services
Air Quality Program
Washington State Department of Ecology

Date

This Prevention of Significant Deterioration Permit has been Approved by:

James O. Luce
Chair
Energy Facility Site Evaluation Council

Date

This Prevention of Significant Deterioration Permit has been Approved by:

Richard Albright
Director
Office of Air, Waste and Toxics
U.S. Environmental Protection Agency, Region 10

Date

NOTICE OF CONSTRUCTION APPROVAL CONDITIONS

1. BP will comply with all Prevention of Significant Deterioration Approval Conditions.
2. Ammonia (free NH₃ and combined measured as NH₃) emissions from each combustion turbine exhaust stack shall not exceed 5.0 ppmdv corrected to 15% O₂ and 8.9 kg/hr (19.6 lb/hr), both 24 hour average.
 - 2.1. Compliance shall be determined by either Bay Area Air Quality Management District Source Test Procedure ST-1B, EPA Conditional Test Method CTM-027, or an equivalent method approved in advance by EFSEC. Tests are to be done at several operating rates such as 70%, 85%, and 100% load to establish a correlation between the heat input rates of the gas turbine and its associated HRSG, the SCR ammonia injection rate, and the corresponding NH₃ emission concentration at the exhaust point.
 - 2.2. Continuous compliance shall be demonstrated by annual testing in accordance with Condition 2.1.
 - 2.3. Continuous compliance shall be indicated by the correlation established in Condition 2.1, and updated annually per Condition 2.2.
 - 2.4. An ammonia CEMS system may be used to indicate continuous compliance and satisfy Condition 2.2. The CEMS must meet the requirements of Approval Condition 4.1.
3. Opacity:
 - 3.1. Each HRSG exhaust stack shall not exceed a six minute average of 5%.
 - 3.2. Opacity shall be determined by use of EPA Reference Method 9, or an equivalent method approved in advance by EFSEC. A certified opacity reader shall read and record the opacity of each operating unit once per week.
 - 3.3. An opacity CEMS system may be used to indicate continuous compliance and satisfy condition 3.1. The opacity CEMS must meet the requirements of Condition 4.2.
 - 3.4. The limit for opacity is relieved during start up and shutdown periods.
4. Continuous Emission Monitoring Systems (CEMS)
 - 4.1. CEMS for ammonia (if used) shall meet the requirements contained in 40 CFR, Part 63, Appendix A, Reference Method 301, Validation Protocol, and 40 CFR, Part 60, Appendix F, Quality Assurance Procedures, or other EFSEC approved performance specifications and quality assurance procedures.
 - 4.2. CEMS for opacity (if used) shall meet the requirements contained in 40 CFR Part 60, Appendix B, Performance Specification 1, and in 40 CFR, Part 60, Appendix F, Quality Assurance Procedures.

5. CEMS and process data shall be submitted quarterly, in written form (or electronic if permitted by the EFSEC) within thirty days of the end of each calendar quarter to EFSEC, its authorized representative (if any), and to the EPA Region X Office of Air Quality. A different schedule and format may be approved by EFSEC.
 - 5.1. For ammonia:
 - 5.1.1. Any reference tests performed, along with the correlation used to estimate ammonia emissions.
 - 5.1.2. Daily hourly average ammonia emissions in the unit of the standard.
 - 5.2. For opacity:
 - 5.2.1. Daily opacity readings
 - 5.3. For each occurrence of the monitored emissions or process parameters in excess of the standard, the quarterly emissions report shall include the following:
 - 5.3.1. The time of the occurrence.
 - 5.3.2. Magnitude of the emissions or process parameters excess.
 - 5.3.3. Duration of the excess.
 - 5.3.4. The probable cause.
 - 5.3.5. Corrective actions taken or planned.
 - 5.3.6. Any agency contacted.

This Notice of Construction Approval has been Prepared by:

Robert C. Burmark, P.E.
Engineering and Technical Services
Air Quality Program
Washington State Department of Ecology

Date

This Notice of Construction has been Approved by:

James O. Luce
Chair
Energy Facility Site Evaluation Council.

Date

Appendix A – Summary of Emission Limitations for EFSEC/2002-01 PSD and NOC Approval

Note: This table is a summary of the permit’s conditions. If there is a conflict between this table and a permit provision, the written permit provision takes precedence.

| COMBUSTION TURBINE WITH ADVANCED DRY LOW NOX TECHNOLOGY, SCR, AND OXIDATION CATALYST (PER TURBINE) | | | | |
|---|--|---|--|---|
| Pollutant | Limit | Averaging Time | Test Method (or equivalent approved by EFSEC) | Stack Testing or Certification Frequency |
| NO _x @15% O ₂ | 2.5 ppm _{dv} 26.5 lb/hr 108.3 tpy | 3 hour 24 hour 12 month rolling average | RM 20 and CEMs | Initial and Annual CEM RATA |
| CO @ 15% O ₂ | 2.0 ppm _{dv} 12.9 lb/hr 78.8 tpy | 3 hour 3 hour 12 month rolling average | RM 10 and CEMs | Initial and Annual CEM RATA |
| SO ₂ | 12.5 lb/hr 25.5 tpy | 24 hour 12 month rolling average | RM 6 or 6C or 8, and fuel monitoring (NG only) CEM after decision made to use refinery gas | Initial and annual for 3 years ¹ Annual CEM RATA after CEM installed. |
| PM ₁₀ | 29.2 lb/hr 127.4 tpy | 24 hour 12 month rolling average | RM 5 or 201 or 201A, and 202 | Initial and annual for 3 years ¹ |
| VOC | 6.9 lb/hr 29.1 tpy | 24 hour 12 month rolling average | RM 25A or 25B | Initial and annual for 3 years ¹ |
| Sulfuric Acid Mist | 3.5 lb/hr | 24 hour | RM 8 | Initial and annual for 3 years ¹ |
| Ammonia | 5.0 ppm _{dv} 19.6 lb/hr | 24 hour 24 hour | Conditional Test Method CTM-027, or Bay Area Air Quality Management District Source Test Procedure ST-1B | Initial and Annual according to agreed protocol ² |
| Opacity | 5% | 6 minute (one weekly reading) | RM 9 | Initial and 6 month reader certification |
| COOLING TOWER | | | | |
| PM ₁₀ | 7.1 tpy | 12 month rolling average | Calculation method approved by EFSEC | Initial certification of drift eliminator installation |
| EMERGENCY GENERATOR | | | | |
| Operating Hours | 250 hours | 12 month rolling average | Hour meter or automatic data system | Engine manufactured to meet Federal new engine standards |
| NO _x | 3.4 tpy | 12 month rolling average | Emission factor | Emission factor approved by EFSEC |
| SO ₂ | On road specification diesel SO ₂ | Report quarterly | Analysis of fuel by supplier | Certification by fuel supplier at time of fuel purchase |
| FIREWATER PUMP | | | | |
| Operating Hours | 250 hours | 12 month rolling average | Log of hours of operation | Engine manufactured to meet Federal new engine standards |
| SO ₂ | On road specification diesel SO ₂ | Report quarterly | Analysis of fuel by supplier | Certification by fuel supplier at time of fuel purchase |

1. After 3 consecutive years of annual tests on each HRSG stack have demonstrated compliance, testing of each HRSG stack may be reduced to once every 5 years. If a test demonstrates noncompliance, a retest along with resumption of annual testing is required for the unit until 3 consecutive years demonstrate compliance.

2. Tests are to be done at several operating rates such as 70%, 85%, and 100% load to establish a correlation between the heat input rates of the gas turbine and its associated HRSG, the SCR ammonia injection rate, and the corresponding NH₃ emission concentration at the exhaust point.