U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 532

AUG 23 1982

W. J. Finnegan, Director
Conservation and Environmental Affairs
Puget Sound Power and Light Company
Puget Power Building
Bellevue, Washington 98009

Dear Mr. Finnegan:

We have evaluated your application for a Prevention of Significant Deterioration (PSD) permit to construct two (2) 100 megawatt combustion turbines at the Fredonia Generating Station near Mount Vernon, Washington and have determined that the project will meet the requirements of the PSD permit regulations and the Clean Air Act. Accordingly, on the basis of the complete PSD permit application, EPA hereby grants its approval to the Puget Sound Power and Light Company to construct the turbines subject to the terms and conditions contained in the enclosed permit. Also enclosed is EPA's Final Determination Analysis Document for this project.

Because no comments were received on the draft permit and no substantive changes have been made in the final permit, the permit is effective immediately.

Sincerely,

John R. Spencer
Regional Administrator

Enclosure

FINAL DETERMINATION ANALYSIS DOCUMENT
PREVENTION OF SIGNIFICANT DETERIORATION

APPROVAL OF CONSTRUCTION OF THE FREDONIA GENERATING STATION NEAR MOUNT VERNON, WASHINGTON

Scope

This document presents the final determination by the Environmental Protection Agency (EPA) to approve the construction of the Puget Sound Power and Light Company's Fredonia Generating Station near Mount Vernon, Washington, under the Federal requirements of Part C, Title 1, of the Clean Air Act; "Prevention of Significant Deterioration of Air Quality (PSD)."

Background

On February 12,1982, EPA Region 10 received from the Puget Sound Power and Light Company a complete PSD permit application requesting approval to construct two (2) 100 megawatt combustion turbines at the Fredonia Generating Station near Mount Vernon, Washington. EPA reviewed this and presented its findings in a preliminary determination document which was released for public comment and published in the Skagit Valley Herald on July 16, 1982. Affected governmental agencies and the general public were notified of their opportunity to submit written comments and request a public hearing regarding EPA's preliminary determination.

Public Comment

No comments and no requests for public hearings were received.

Findings

Based upon our review of the application, EPA finds that the National Ambient Air Quality Standards and PSD increments will not be exceeded as a result of this project and that the proposed facility will employ Best Available Control Technology (BACT). In light of these findings, EPA grants approval to construct the Fredonia Generating Station by the Puget Sound Power and Light Company. This approval is subject to the terms and conditions set forth in the letter of approval to the Puget Sound Power and Light Company.

ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON 98101

APPLICATION OF:	)	
	)	
Puget Sound Power and Light Company	)	No. PSD-X82-09
Puget Power Building	)	APPROVAL OF APPLICATION
Bellevue, Washington 98009	)	TO CONSTRUCT
	)	

Pursuant to the Agency regulations for the Prevention of Significant Deterioration of Air Quality (PSD) set forth at Title 40, Code of the Federal Regulations, Part 52 and based upon the complete application submitted on February 12, 1982 by the Puget Sound Power and Light Company the Regional Administrator now finds as follows:

FINDINGS

1. The Puget Sound Power and Light Company (hereafter referred to as Puget Power) proposes to construct two (2) combustion turbine generators at the Fredonia Generating Station near Mount Vernon, Washington.

2. An analysis of projected emissions indicates that this project has the potential to emit more than the EPA significant levels for nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2) and particulate matter (PM) and is therefore subject to PSD review for these pollutants.

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12-8-76 DOJ

3. The proposed construction is located in an area designated as "Class II" under Section 162(b) of the Clean Air Act.

4. Modeling analysis of NO_x, CO, SO_2 and PM has been conducted and demonstrates that while emissions of these pollutants will increase, the construction will not cause any violations of the applicable National Ambient Air Quality Standards or PSD increments so long as the turbines are operated in accordance with the conditions specified below. With the application of best available control technology, as required by Section 165(a)(4), operation of the turbines will meet the applicable PSD requirements.

Accordingly, it is hereby determined that, subject to the conditions set forth below, Puget Power will be permitted to operate the subject turbines at the Fredonia Generating Station near Mount Vernon, Washington.

APPROVAL CONDITIONS

1. Emissions of nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2) and particulate matter (PM) shall not exceed the following:

EMISSION LIMITATIONS

Pollutant	Concentration (% by volume at 15% O_2 dry basis)	lb/hr	Tons/Year
NO_x	$[.0075 \frac{(14.4)}{Y} + F]$*	480.0	2061.0
CO	----	185.0	645.0
PM	----	2.9	12.5
SO_2	Fuel oil sulfur content of 0.5% by weight or less	640.0	154.0

* Y= manufacturer's rated heat rate at peak load in kilojoules per watt hour. Can not exceed 14.4 kilojoules per watt hour.
F is a function of the fuel nitrogen content as follows:

N (fuel bound nitrogen by percent weight)	F
$N < 0.015$	0
$0.015 < N < 0.1$	0.04N
$0.1 < N < 0.25$	0.004 + 0.0067 (N - .1)
$N > 0.25$	0.005

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2. With the exception of NO_x, CO, SO_2 and PM, increases in potential emissions of any pollutant regulated under the Clean Air Act resulting from this construction will be less than the significant levels [Section 52.21(b)(23)(i)].

3. Puget Power shall notify the Northwest Air Pollution Authority (NWAPA) of any occurrence of any emissions in excess of limits specified in Condition Numbers 1 and 2 above; such notification shall be forwarded to NWAPA in writing in a timely fashion and in each instance no later than ten (10) days from the date of such occurrence. The notification shall include an estimate of the resultant emissions and a narrative report of the cause, duration and steps taken to correct the problem and avoid a recurrence. Puget Power shall contemporaneously send a copy of all such reports to EPA.

4. This approval shall become void if on-site construction is not commenced within eighteen (18) months after receipt of the approval or if on-site construction once initially commenced is discontinued for a period of eighteen (18) months.

5. As approved and conditioned by this permit any construction, modification or operation of the proposed generating facility shall be in accordance with the application which resulted in this permit. Moreover, any such activity which is undertaken by Puget Power, or others, in a manner which is inconsistent with this permit shall be subject to EPA enforcement under the Clean Air Act. Nothing in this permit shall be construed to relieve Puget Power of its obligations under any state or federal laws including Sections 303 and 114 of the Clean Air Act.

6. Compliance with emission limitations shall be demonstrated by source tests and a program of emission monitoring as described below:

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a. Compliance Demonstration: Compliance testing shall be conducted within 60 days after achieving the maximum production rate at which the turbines will be operated but not later than 180 days after installation is complete. NO_x and SO_2 emissions shall be tested as required under Federal New Source Performance Standards (NSPS) (40 CFR 60.335). No compliance testing is required for CO or PM.

b. Compliance Monitoring: The NSPS monitoring requirements (40 CFR 60.334) shall be followed.

7. EPA and NWAPA shall be notified in writing of the commencement of construction and the start up date within thirty (30) days of the date of their occurrence.

Access to the source by EPA or State regulatory personnel will be permitted upon request for the purpose of compliance assurance inspection. Failure to allow such access is grounds for revocation of this permit.

AUG 23 1982
Date

John R. Spencer
Regional Administrator

Form OBD-183
12-8-76 DOJ

PUGET
POWER

June 16, 1995

Raymond Nye
U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

Subject Prevention of Significant Deterioration Permit No. PSD-82-09 August 23, 1982, Fredonia Generating Station, 1224 Ovenell Road, Mount Vernon, Washington

Dear Mr. Nye:

The final Fredonia PSD permit limits PM for each combustion turbine to 2.9 lb/hr and 12.5 tons/year. The preliminary permit states "Based on burning No. 2 distillate fuel oil for a maximum of 20 days per year, the PM emission limitation is 25 tons per year". (Last sentence of paragraph 2.2.4, page 5)

The purpose of this letter is to request a modification of the Fredonia Generating Station PSD Permit's particulate matter (PM) limit. The permit limits PM emissions for each combustion turbine unit to 2.9 lb/hr and 12.5 tons/yr. This calculation was based on firing No. 2 diesel for 20 days a year, natural gas the rest of year and zero natural gas fired PM emission, and does not account for PM emissions when the two turbines are natural gas fired and also understates the hourly emission rate.

The PSD ambient air quality analysis was based on firing diesel at peak load for 20 days and firing natural gas the rest of the year. The PM emission factor used was 52 lb/hr (not 2.9) for each unit or 104 lb/hr total.

The PSD calculated the PM limits as follows:

12.5 tons/yr = (52 lb/hr x 24 hr/day x 20 days/yr)/(2000 lb/ton)
2.9 lb/hr = (12.5 tons/yr x 2000 lb/ton)/(8760 hrs/yr)

The AP-42, Table 3.1-1, gas turbine PM (solids) emission factor is .0193 lb/MMBtu natural gas fuel input. Accordingly the base load (1119 MMBtu/hr) natural gas fired PM emission rate for each unit would be 22 lb/hr (44 lb/hr both units) with annual emissions of 91 tons/year (182 tons/yr both units).

The permit could be modified to add in the natural gas PM emissions in the following ways while continuing to use the original ambient air quality analysis:

results are ≤ 1 ug/m³
~~182~~ 207 pg would be greater impact
will consume some increment

1 PM limit for both turbines:
104 lb/hr and 25 tons/yr firing diesel and
44 lb/hr and 182 tons/yr firing natural gas

2 PM limit for both turbines:
104 lb/hr and 207 tons/yr firing natural gas and diesel

3 PM limit for each turbine:
52 lb/hr and 12.5 tons/yr firing diesel and
22 lb/hr and 91 tons/yr firing natural gas

4 PM limit for each turbine:
52 lb/hr and 104 tons/yr firing natural gas and diesel

Modification 1 or 2 is preferred because it allows operational and maintenance flexibility with no change in hourly rates or total emissions.

Enclosed are the final PSD permit, preliminary PSD permit, and the table of emission factors used in the application and the PSD review.

Thank you for your interest in this matter. Should you need additional information please call Ted Van Decar, 861-6011, or Bob Barnes, 462-3096.

VTY

Ron Bailey
Vice President Power Systems

bcc
Bob Barnes

To File

FREDONIA--001.00
GENERAL

R. BAILEY
R. OLSON
E. SCHILD
T. VAN DECAR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: AT-082

OCT 24 1995 Oct 24, 1995

Ron Bailey
Puget Power
Puget Power Building
Bellevue, Washington 98009

PUGET POWER
OCT 26 1995
FUELS & JOINT PROJECTS

Dear Mr. Bailey:

In a June 16, 1995, letter you confirmed a discrepancy in the prevention of significant deterioration permit (No. PSD-X82-09) for Fredonia generating station near Mount Vernon, Washington. The PSD permit particulate emission limit restricted the burning of No.2 distillate oil for a maximum of 20 days per year, however, the permit failed to include particulate emissions from the burning of natural gas.

The Environmental Protection Agency (EPA) determined that the turbine generators still constitute best available control technology and the increase in emissions would not cause or contribute to violations of a national ambient air quality standard or a PSD increment. Therefore, EPA concurs that no operational changes have been made to the generating turbines and actual emissions have not increased at the source. EPA is granting your request to revise the particulate emission limitations for the Fredonia generating station.

This letter hereby grants you authorization to change PSD permit No. PSD-X82-09 as follows:

On page 2 of 4, line 20, delete 2.9 and 12.5 and replace with 104 and 207, respectively.

Because these permit modifications do not result in a net emissions increase of actual emissions, the permit modifications are effective immediately.

If you have any questions, please feel free to contact Raymond Nye of my staff at (206) 553-4226.

Sincerely,

Anita Frankel, Director
Office of Air

cc: Al Newman, WDOE

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OCT 26 1995

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ORIGINAL

WASHINGTON STATE DEPARTMENT OF ECOLOGY
POST OFFICE BOX 47600
OLYMPIA, WASHINGTON 98504-7600

IN THE MATTER OF:	]	**NO. PSD-01-04**
Puget Sound Energy	]	
Fredonia Power Generating Station	]	**FINAL APPROVAL OF PREVENTION OF**
P.O. Box 97034, OBC-14N	]	**SIGNIFICANT DETERIORATION APPLICATION**
Bellevue, Washington 98009-9734	]	

Pursuant to the United States Environmental Protection Agency (EPA) regulation for the Prevention of Significant Deterioration (PSD) set forth in Title 40, Code of the Federal Regulations (CFR), 40 CFR Part 52.21, and regulations set forth in the Washington Administrative Code 173-400-141 and based upon the PSD application submitted by Puget Sound Energy (PSE) on May 7, 2001, the additional information submitted on October 5 and October 23, 2001, June 13 and December 3, 2002, January 3 and March 14, 2003, and the technical analysis performed by the Department of Ecology (Ecology). Ecology determined the application to be complete on March 14, 2003. Following all the information submitted by PSE, Ecology now finds the following:

FINDINGS

1. PSE proposes to install and operate two Pratt & Whitney FT-8 Twin Pac simple-cycle combustion turbines at the Fredonia Generating Station (FGS). PSE currently refers to these combustion turbines as "Fredonia Generating Station Turbine 3 and Turbine 4." The turbines may use either natural gas or distillate fuel. Each turbine has the capability to supply a gross power output of approximately 54 MW. PSE has an Administrative Order on Consent (signed April 6, 2001), which grants PSE permission to construct and operate two turbines prior to obtaining a PSD permit.
2. FGS is located in Skagit County, Washington near the City of Mt. Vernon ($48^0 27' 17''$ N latitude, $122^0 26' 14''$).
3. The site of the proposed project is within a Class II area that is in attainment with regard to all pollutants regulated by the National Ambient Air Quality Standards (NAAQS).
4. The five Class I areas closest to the Fredonia generating facility are identified in the table below.

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Northwest Air Pollution Authority

Class I Area	Approximate Distance from Facility, km
North Cascade National Park	68
Glacier Peak Wilderness	75
Olympic National Park	78
Pasayten Wilderness	110
Alpine Lakes Wilderness	129

5. This project is subject to New Source Performance Standards (NSPS): Subpart GG (Standards of Performance of Stationary Gas Turbines).

6. The emissions of all air pollutants from the proposed modification are subject to review under Chapter 173-400 WAC, Chapter 173-460 WAC, and the regulations of the Northwest Air Pollution Authority (NWAPA). Chapter 173-400 WAC includes provision for PSD review (WAC 173-400-141). This permit considers only PSD applicable issues. All other air quality related notice of construction approval issues are subject to NWAPA's authority.

7. FGS currently has the potential to emit more than 250 tons per year of a pollutant that is subject to the federal Clean Air Act. This qualifies FGS as an existing major stationary source as defined in federal regulations 40 CFR Part 52.21(b)(1)(i)(*b*).

8. The project will use natural gas and/or distillate fuel as the turbines' fuels.

   8.1 The project may use low-sulfur distillate fuel having not greater than 0.032% sulfur by weight until the inventory of such fuel existing at the time of issuance of this permit has been consumed by all fuel-burning equipment at or otherwise removed from the Fredonia Generating Station.

   8.2 Use of distillate fuel having greater than 0.01% sulfur-content by weight is prohibited during the months of May through July in any year.

   8.3 Distillate fuel having a sulfur content not greater than 0.01% by weight may be used at any time.

9. The Best Available Control determinations are shown in the table below:

Pollutant	BACT	Emissions Concentration	Annual Emissions, tons per year (TPY)	PSD Significance Level TPY
Nitrogen oxides (NO_X)	Selective Catalytic Reduction	5 parts per million on a dry volumetric basis (ppmdv) at 15% O_2	102	40
Sulfur oxides as sulfur dioxide (SO_2)	Low sulfur fuels (natural gas and 0.01% sulfur distillate fuel, see Finding 8, above)	1.5 ppmdv at 15% O_2	45	40
Sulfuric acid mist (H_2SO_4)	Low sulfur fuels (natural gas and 0.01% sulfur distillate fuel, see Finding 8, above)	Daily limit is 176 lbs.	32	7
Particulate matter smaller than 10 microns (PM/PM_{10})	Clean burning fuel and good combustion practice	0.01 grains/dry standard cubic foot (gr/dscf)	272	15

10. The proposed net increases in potential emissions from this project for NO_x, SO_2, H_2SO_4, and PM/PM_{10} are each above the corresponding PSD significance levels. All are subject to review under PSD.

11. Allowable emissions from the new emissions units are below modeling significance for all pollutants, and therefore, will not cause or contribute to air pollution in violation of:

    11.1 Any ambient air quality standard.

    11.2 Any applicable maximum allowable increase over the baseline ambient concentration.

12. Ambient impact analysis indicates that pollutant deposition on soils and vegetation in any of the surrounding Class I areas will not exceed 60% of federal land manager criteria for significance.

13. Ambient impact analysis indicates that degradation of regional visibility, or impairment of visibility in any Class I areas from the proposed emissions will not exceed 75% of federal land manager criteria for concern.

14. No significant effect on industrial, commercial, or residential growth in the Fredonia/Skagit County area is anticipated due to the project.

15. Pursuant to requirements under the April 6, 2001 Administrative Order on Consent, PSE completed several compliance tests and has been continuously monitoring NO_X and CO since operation startup in July 2001. Ecology has determined that these compliance

demonstration and relative accuracy tests on the continuous monitoring systems satisfy the following initial compliance demonstrations listed in the Approval Conditions below:

15.1 Conditions 5.

15.2 Condition 8 on both turbines for natural gas and on FGS Turbine #3 for distillate fuel.

15.3 Condition 11 on FGS Turbine #3.

15.4 Condition 14 for natural gas.

16. Pursuant to requirements under the April 6, 2001 Administrative Order on Consent, PSE satisfied Condition 29 prior to finalization of this PSD permit.

17. Ecology finds that all requirements for PSD application are satisfied and that as approved below, the new emissions units comply with all applicable federal new source performance standards. Approval of the PSD application is granted subject to the following conditions:

APPROVAL CONDITIONS

1. Definitions:

1.1 Unless otherwise indicated, "turbine" or "turbines" in this permit shall mean the turbines designated at the time of issuance of this permit as Fredonia Generating Station Turbine 3 and/or Turbine 4.

1.2 "Low-sulfur distillate fuel" shall mean distillate fuel having not greater than 0.01% sulfur content by weight.

1.3 The 60-day deadline for initial compliance demonstration using distillate fuel referred to in Conditions 5.1, 1, 8.1, 11.1, and 14.1 shall not be counted as including days in May, June, or July.

2. The turbines shall be fueled only with natural gas and/or distillate fuel:

2.1 Distillate fuel having more than 0.01% and not more than 0.032% sulfur by weight may be used subject to the following:

2.1.1 May be used in Fredonia Generating Station Turbine 3 or Turbine 4 only during the months of January through April and August through December of any year.

2.1.2 May not be used in Fredonia Generating Station Turbine 3 or Turbine 4 after a total of 2,900,000 gallons of said fuel have been consumed by all fuel-burning equipment at the Fredonia Generating Station or otherwise removed from the facility.

2.2 Low-sulfur distillate fuel may be used at any time.

3. NO_x emissions from each turbine exhaust stack shall not exceed 5.0 parts per million on a dry volumetric basis (ppmdv) over a three-hour average when corrected to 15.0 percent oxygen.

4. NO_x emissions from each turbine exhaust stack shall not exceed:

4.1 290.4 pounds (132 kg.) per day.

4.2 51 tons (46,266 kg.) in any consecutive twelve-month period.

5. Initial compliance for Condition 3 at each turbine exhaust stack:

5.1 Initial compliance shall be demonstrated for operation on both natural gas and distillate fuel not later than 60 days after the date this permit has become final.

5.2 PSE will submit a test plan to Ecology and NWAPA for approval at least 30 days prior to initial performance testing.

5.3 Initial compliance testing:

5.3.1 Shall be in accordance with EPA Reference Method 20, except that the instrument span shall be 50 ppm or less.

5.3.2 Shall be conducted consistent with the requirements in 40 CFR Part 60.335.

6. Compliance with NO_x emissions limits from each turbine exhaust stack:

6.1 Compliance with Condition 3 shall be monitored by a Continuous Emission Monitor (CEM) for NO_X and oxygen (O_2) that meets the requirements of Approval Condition 16.

6.2 The CEM for NO_x shall be operated during startup and shutdown periods.

6.3 Compliance for Conditions 4.1 and 4.2 shall be monitored using the emissions data monitored pursuant to Condition 6.1.

6.3.1 Mass emission rates will be determined using the appropriate procedures outlined in 40 CFR Part 60 Appendix A Method 19.

6.3.2 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

6.3.3 Emissions data shall be converted to pounds NO_X per day for monitoring Condition 4.1 compliance.

6.3.4 Emissions data shall be converted to tons NO_X per year (TPY) for monitoring Condition 4.2 compliance.

7. SO_2 emissions from each turbine exhaust stack:

7.1 When burning distillate fuel having more than 0.01% sulfur by weight:

7.1.1 Shall not exceed 5 ppmdv corrected to 15.0 percent oxygen, one-hour average.

7.1.2 Shall not exceed 17 pounds (7.7 kg.) per hour.

7.2 When burning natural gas or low-sulfur distillate fuel:

7.2.1 Shall not exceed 1.5 ppmdv corrected to 15.0 percent oxygen, one-hour average.

7.2.2 Shall not exceed 5.1 pounds (2.3 kg.) per hour.

8. Initial compliance for SO_2 at each turbine stack:

8.1 Shall be demonstrated for operation on both natural gas and distillate fuel not later than 60 days after the date this permit has become final.

8.2 PSE will submit a test plan to Ecology and NWAPA for approval at least 30 days prior to initial performance testing.

8.3 Initial compliance testing for Condition 7:

8.3.1 Shall be in accordance with EPA Reference Method 20.

8.3.2 The instrument span shall be 3 ppm or less.

8.3.3 All span and calibration gases used shall follow in accordance with the method requirements.

8.3.4 The initial compliance test shall be conducted consistent with the requirements in 40 CFR Part 60.335.

8.3.5 Initial compliance demonstration with Condition 7.1.1 will satisfy the initial compliance demonstration for Condition 7.2.1 for use of low-sulfur distillate fuel.

8.4 Initial compliance for Condition 7.1.2 and 7.2.2 will be determined from the arithmetic mean of the SO_2 emissions source test results pursuant to Condition 8.3, converted to lbs. SO_2 per hour.

8.4.1 Mass emission rates will be determined using the appropriate procedures outlined in 40 CFR Part 60 Appendix A Method 19.

8.4.2 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

8.4.3 Initial compliance demonstration with Condition 7.1.2 shall satisfy the initial compliance demonstration for Condition 7.2.2 for use of low-sulfur distillate fuel.

9. Continuous emission monitoring of SO_2 is not required.

9.1 Continuous compliance with the limit for each of the stacks shall be by means of fuel sulfur content reporting and fuel flow monitoring to each turbine consistent with 40 CFR Part 75, Appendix D, or

9.2 By an alternative fuel monitoring schedule that has been approved by USEPA.

10. H_2SO_4 emissions from each turbine exhaust stack shall:

10.1 Shall not exceed 310 pounds (140 kg.) per day when burning distillate fuel having more than 0.01% sulfur-content by weight:

10.2 Shall not exceed 88 pounds (40 kg.) per day when burning natural gas or low-sulfur distillate fuel.

11. Initial compliance for H_2SO_4 at each turbine stack:

11.1 Shall be demonstrated for operation on distillate fuel not later than 60 days after the date this permit has become final.

11.2 PSE will submit a test plan to Ecology and NWAPA for approval at least 30 days prior to initial performance testing.

11.3 Initial compliance testing for Condition 10 shall be by EPA Reference Method 8 with incorporation of the procedures given in EPA Reference Method 6, Section 7.3 for elimination of ammonia interference, or an equivalent method approved in advance by Ecology or NWAPA.

11.4 Mass emission rates will be determined using the appropriate procedures outlined in 40 CFR Part 60 Appendix A Method 19 as modified for H_2SO_4.

11.5 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

11.6 Initial compliance demonstration with Condition 10.1 will satisfy the initial compliance demonstration for Condition 10.2 for use of low-sulfur distillate fuel.

12. Emissions of particulate matter less than 10 micron diameter (PM_{10}) from each turbine exhaust stack shall not exceed 0.01 gr/dscf corrected to 15.0 percent oxygen one-hour average.

13. PM_{10} emissions from each turbine exhaust stack shall not exceed 31.0 pounds (14.1 kg.) per hour.

14. Initial compliance for PM_{10} emissions for each turbine exhaust stack:

14.1 Shall be demonstrated for operation on both natural gas and distillate fuel not later than 60 days after the date this permit has become final.

14.2 PSE will submit a test plan to Ecology and NWAPA for approval at least 30 days prior to initial performance testing.

14.3 Initial compliance testing for Condition 12 shall be by either EPA Reference Methods 5, 201, or 201A, plus Reference Method 202 or an equivalent method agreed to in advance by Ecology or NWAPA. Paragraph 2.2 of Reference Method 202 may be adapted to sulfates to account for ammonia interference.

14.4 Initial compliance for Condition 13 will be determined from the arithmetic mean of the PM_{10} emissions source test results pursuant to Condition 14.3, converted to lbs. PM_{10} per hour.

14.4.1 Mass emission rates will be determined using the appropriate procedures outlined in 40 CFR Part 60 Appendix A Method 19.

14.4.2 An equivalent mass emission rate calculation method may be used if approved in advance by Ecology.

15. Compliance with H_2SO_4 and PM_{10} emissions limits from each turbine exhaust stack shall be monitored by source testing.

15.1 Source test methodology shall be the same for each respective pollutant as specified for initial compliance testing in Conditions 11, and 14 or equivalent methods agreed to in advance by Ecology or NWAPA.

15.2 Source testing shall be conducted not less frequently than annually until three consecutive annual tests are in compliance with a specific pollutant's (H_2SO_4 or PM_{10}) emission limitations.

15.2.1 Source testing frequency for H_2SO_4 or PM_{10} can be reduced to once every three years if the immediately previous three years' source test results have demonstrated compliance with each respective emissions compliance condition, and if agreed to in writing by Ecology or NWAPA.

15.2.2 If a source test for H_2SO_4 or PM_{10} indicates noncompliance with the respective emissions compliance condition, the frequency of testing for the aberrant pollutant will return to Condition 15.2.

16. Continuous Emission Monitoring Systems: CEMS for NO_x, O_2, and (if used) exhaust gas

flow rate compliance shall meet the requirements contained in 40 CFR 75, Emissions Monitoring.

17. Recordkeeping:

17.1 PSE shall retain the following records for each turbine for a period of five years:

17.1.1 Quarterly and annual (year to date) quantity summations of each type of fuel used and corresponding heat input rates.

17.1.2 Results from:

17.1.2.1 All fuel sulfur analyses.

17.1.2.2 All fuel nitrogen analyses.

17.1.2.3 All stack emissions tests.

17.2 Results of any monitor audits or accuracy checks.

17.3 The duration and nature of any monitor down time.

17.4 The date and time period that each turbine operates, with totals of daily, quarterly and annual hours of operation

17.5 PSE shall record the following for all times of operation:

17.5.1 Hourly average NO_x concentrations pursuant to Conditions 3.

17.5.2 NO_x mass emissions pursuant to Condition 4.

17.6 PSE shall have these records readily available for NWAPA and Ecology inspection upon request.

18. Reporting:

18.1 Quarterly to Ecology or NWAPA (unless a different testing and reporting schedule has been approved by Ecology or NWAPA) within thirty days of the end of each calendar quarter:

18.1.1 CEMS, stack test, and process data pursuant to Conditions 17.1 through 17.5 shall be reported in written (or electronic if permitted by Ecology or NWAPA) form.

18.1.2 Certification by the responsible party for the facility that the relevant equipment was operated and maintained in accordance with the operational parameters and practices developed pursuant to Condition 19.

18.1.3 Beginning with the issuance date of this permit and until 2,900,000 gallons of distillate fuel having more than 0.01% sulfur-content by weight has been consumed by all fuel-burning equipment at the Fredonia Generating Station or otherwise removed from the facility.

18.1.3.1 Quarterly and total-to-date summations of the quantity of all distillate fuel used in Fredonia Generating Station.

18.1.3.2 Quantity of distillate fuel having more than 0.01% sulfur-content by weight in inventory at the Fredonia Generating Station.

18.2 For parameters subject to monitoring under the Title IV Acid Rain program, the

reporting requirements shall be in accordance with the requirements of that program.

18.3 Each occurrence of monitored emissions in excess of the standard shall be reported in accordance with the requirements of WAC 173-400-107(3) [effective 9/20/93], and shall include the following:

18.3.1 For parameters subject to monitoring under the Title IV Acid Rain program, the reporting requirements shall be in accordance with the requirements of that program in addition to elements indicated in Condition 18.3.2 below.

18.3.2 For all pollutants:

18.3.2.1 The time of the occurrence.

18.3.2.2 Magnitude of the emission or process parameters excess.

18.3.2.3 The duration of the excess.

18.3.2.4 The probable cause.

18.3.2.5 Corrective actions taken or planned.

18.3.2.6 Any other agency contacted.

19. A site-specific operating and maintenance (O&M) manual for the Pratt & Whitney FT-8 Twin Pac simple-cycle duel-fuel fired combustion turbines installed pursuant to this permit shall be developed and shall at a minimum include:

19.1 Manufacturers' operating instructions and design specifications shall be included in the manual.

19.2 Normal operating parameters and design specifications.

19.3 Maintenance schedule and procedures.

19.4 Updates to reflect any modifications of the equipment or its operating procedures.

19.5 Copies of the manuals available at the facility for Ecology or NWAPA.

20. This approval shall become invalid if:

20.1 Construction of the project is not commenced prior to eighteen (18) months after receipt of the final approval, or if

20.2 Construction of the facility is discontinued for a period of eighteen (18) months.

20.3 PSE may extend the 18-month period upon satisfactorily showing that an extension is justified, pursuant to 40 C.F.R. 52.21(r)(2) and applicable EPA guidance.

21. 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, Part 60, Appendix A Method 20.

22. Adequate, permanent, and safe access to the test ports shall be provided. Other arrangements may be acceptable if approved by Ecology or NWAPA personnel prior to or during installation.

23. Any activity that is undertaken by the PSE Fredonia Power Generation Facility or others, in a manner which is inconsistent with the application and this determination, shall be subject to Ecology or NWAPA enforcement under applicable regulations. Nothing in this determination shall be construed so as to relieve PSE Fredonia Power Generation Facility of

its obligations under any state, local, or federal laws or regulations.

24. The PSE Fredonia Power Generation Facility shall notify Ecology and NWAPA in writing at least thirty days prior to initial startup. Initial startup for each turbine is defined as the time when the first electricity from that turbine is delivered to the electrical power grid.

25. Access to the source by Ecology and NWAPA or the authorized representative of Ecology and NWAPA shall be permitted upon request for the purpose of compliance assurance inspections. Failure to allow access is grounds for revocation of this determination of approval.

Reviewed by:

Bernard Brady July 16, 2003

Bernard Brady, P.E. Date

Technical, Information, and Engineering Services

Air Quality Program

Washington Department of Ecology

BERNARD J. BRADY STATE OF WASHINGTON 26670 REGISTERED PROFESSIONAL ENGINEER

3-20-05

Approved by:

Mary E. Burg 18 July 2003

Mary E. Burg Date

Program Manager, Air Quality Program

Washington State Department of Ecology

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
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www.nwcleanair.org

REGULATORY ORDER

ISSUE DATE: March 14, 2002
AMENDED: October 2, 2007

NUMBER: 27

This amendment aligns the reporting requirements of the order with applicable regulations and air operating permit terms.

OPERATOR

Puget Sound Energy
Fredonia Generating Station
PO Box 97034 PSE-09N
Bellevue, WA 98009
Contact: Steven Feller

OWNER

Puget Sound Energy
PO Box 97034 PSE-09N
Bellevue, WA 98009

Pursuant to your request and the provisions set forth in Washington Administrative Code (WAC) 173-400-091 and Section 121 of the NWCAA regulation, you are hereby ordered to operate your facility subject to the following emission limits:

1. Nitrogen oxides (NO_X) emissions from Turbine Unit 1 shall not exceed 688.3 tons per year based on a rolling 12-month total. This emission limit shall include all emissions, including emissions during start-up, shutdown, and malfunction periods.
2. Sulfur dioxide (SO_2) emissions from Turbine Unit 1 shall not exceed 47.1 tons per year based on a rolling 12-month total. This emission limit shall include all emissions, including emissions during start-up, shutdown, and malfunction periods.
3. Nitrogen oxide emissions from Turbine Unit 1 shall be measured every 7,500 hours of Turbine Unit 1 operation. Emissions testing shall be done at the most frequent load level and shall follow Title 40 Code of Federal Regulations (CFR) Part 60 Subpart A, Appendix A method 20 or 7E, and the relevant parts of 40 CFR §60.335.
4. If operating hours exceed 3,000 hours per rolling 12 month period for more than 18 consecutive months then periodic NO_X testing (other than quality assurance testing) is not required and PSE shall install and operate a continuous NO_X emissions monitoring system (CMS) that is compliant with 40 CFR Part 60 Appendix B Performance Specification 2 and Appendix F. The CMS may be removed if Turbine Unit 1 operating hours are subsequently

less than 3,000 hours per rolling 12 month period for more than 24 consecutive months. If the CMS is removed then the periodic testing schedule shall resume.

5. For Turbine Unit 1, PSE shall calculate and record monthly hours of operation on natural gas and distillate oil and rolling 12-month NO_X and SO_2 emissions totals within 30 days after the end of each calendar month. PSE shall report the results for the periods January 1 to June 30 and July 1 to December 31 to the Northwest Clean Air Agency by July 31 and January 31, respectively. Emission calculations shall be based on fuel consumption, fuel sulfur content monitoring data, NO_X emissions testing or CMS data, and water injection/turbine load relationships

Attest and Concurrence:

L.G. Odom	DIRECTOR THERMAL AND WIND RESOURCES	10/15/07
Company Representative	Title	Date
Mark Asmundson		10/2/07
Mark Asmundson, Director		Date

northwest Clean Air agency

1600 South Second Street
Mount Vernon, WA 98273-5202
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Original Issuance: July 22, 2003
Revision A: November 17, 2010

Northwest Clean Air Agency (NWCAA) hereby issues Order of Approval to Construct (OAC) #761a

Project Summary: Installation of two Pratt and Whitney Model FT-8 Twin Pac simple-cycle dual-fuel 54 megawatt-capacity combustion turbines.

APPLICANT

Puget Sound Energy
Fredonia Generating Station
13085 Ball Road
Mount Vernon, WA 98273

NOC Contact: Joey Henderson

OWNER

Puget Sound Energy
P.O. Box 97034
Mail Stop PSE 09N
Bellevue, WA 98009

FACILITY LOCATION:

13085 Ball Road, Mount Vernon, WA 98273

Permit History

- The Washington State Department of Ecology issued a Prevention of Significant Deterioration permit (Permit # PSD-01-04) for the project with respect to emissions of particulate matter (PM), sulfuric acid mist, sulfur dioxide (SO2) and oxides of nitrogen (NOx).
- As of the date of issuance, this Order supersedes NWCAA OAC#761 dated July 22, 2003

Note that in addition to other applicable rules and regulations, this project is subject to applicable portions of the following federal regulations:

New Source Performance Standards

- 40 CFR 60 Subpart A - General Provisions
- 40 CFR 60 Subpart GG - Standards of Performance for Stationary Gas Turbines

As authorized by the Northwest Clean Air Agency (NWCAA) Regulation Section 300, this order is issued subject to the following restrictions and conditions:

1. Comply with PSD permit #PSD-01-04 dated July 29, 2003.

2. Visible emissions from each turbine exhaust stack shall not exceed ten percent (six minute average) as measured by 40 CFR 60 Appendix A Method 9.

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3. Total emissions of free NH3 and ammonium salts measured as NH3 from each Twin Pac shall not exceed 8.0 ppmdv corrected to 15 percent oxygen (three hour average).

   a) Compliance with condition 3 shall be determined by Bay Area Air Quality Management District Source Test Procedure ST-1B, "Ammonia, Integrated Sampling," or an equivalent method approved in advance by the NWCAA. Source test samples must be unfiltered as taken from each stack. Fuel consumption, nitrogen oxides emissions, and ammonia injection rate during each emission test shall be reported with the testing results.

   b) One test, as specified in condition 3(a), shall be conducted annually on each turbine exhaust. During this annual test, each turbine may be combusting either natural gas or fuel oil provided that each turbine is tested while combusting fuel oil no less frequently than once every 36 months. Annual tests shall be performed not less than nine months apart and shall be performed at full normal operating load.

4. Except during periods of startup and shutdown as defined below, emissions of carbon monoxide from each Twin Pac stack shall not exceed:

   a) 10.0 ppmdv corrected to 15% oxygen (one hour average)

   b) 44 tons per consecutive twelve month period

5. Compliance with condition 4 shall be monitored with carbon monoxide and oxygen continuous emissions monitoring systems (CEMs) that meet 40 CFR Part 60 Appendix B Performance Specifications 3, and 4 or 4A as appropriate and that are compliant with 40 CFR Part 60 Appendix F and NWCAA Regulation 367 and NWCAA Appendix A. The monitors shall be operated at all times the turbine unit is operating including startup and shutdown. All carbon monoxide and oxygen emissions data collected by the CEMs and concurrent fuel identity and one-hour average (or shorter) fuel usage rate data shall be recorded and kept on-site and available to NWCAA inspectors for at least five years.

6. A data summary shall be provided to the NWCAA in a quarterly report due not later than 30 days after each calendar quarter. All supporting information used to derive the calculated variables shall be available to the NWCAA upon request. The following information shall be provided for each unit for the preceding calendar quarter:

   a) The engine run time allocated to each fuel, the amount of fuel consumed in the quarter, number of startups, and the rolling 12 month summation of time each unit operated in startup and shutdown modes.

   b) The tons of carbon monoxide emitted from each turbine unit over the previous consecutive 12-month period. Mass emissions shall be calculated in accordance with 40 CFR Part 60 Appendix A Method 19, fuel usage data, and CEM data.

7. Except during periods of startup and shutdown as defined below, emissions of volatile organic compounds from each Twin Pac stack shall not exceed 15 tons per consecutive 12 month period.

8. Compliance with condition 7 shall be monitored by periodic emissions testing using EPA method 25 or another test method approved in advance by the NWCAA. Testing shall be conducted every three years.

9. Startup is defined as the period beginning with initial firing and ending 30 minutes later. Shutdown is defined as the last 30 minutes of turbine firing. Each subject turbine shall be operated in startup and shutdown modes for no more than 300 hours in any consecutive 12-month period.

M.J. "Lyn" Tober, PE
Chemical Engineer

Mark Buford, P.E.
Assistant Director

Revision A: Eliminate the ammonia-to-fuel ratio standard and associated requirements. Reduce the annual ammonia slip testing on both fuels to one fuel per year and requiring that testing on fuel oil be completed at least once every 36 months. Remove completed one-time requirement. Delete references to company name. Update reference to monitoring requirements document and agency name.