



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

STATEMENT OF BASIS
FOR
DRAFT
AIR OPERATING PERMIT
&
PHASE II ACID RAIN PERMIT
NO. 06 AQ-C025 THIRD REVISION
FOR
GOLDENDALE GENERATING STATION
Klickitat County, Washington

PREPARED BY:
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JANUARY 21, 2011

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1.0 LIST OF ABBREVIATIONS

BACT	best available control technology
CEMS	continuous emission monitoring system
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
GGG	Goldendale Generating Station
kW	kilowatt
HRSG	heat recovery steam generator
MW	megawatt
NH ₃	ammonia
NOC	Notice of Construction
NO _x	oxides of nitrogen
NSPS	new source performance standard
O ₂	oxygen
PM ₁₀	particulate matter with an aerodynamic diameter of 10 micrometers or less
PSE	Puget Sound Energy
SCR	selective catalytic reduction
SO ₂	sulfur dioxide
SO _x	Oxides of Sulfur
VOC	volatile organic compound
WAC	Washington Administrative Code

2.0 GENERAL INFORMATION

Company Name: Goldendale Generating Station

Source/Plant Name: Goldendale Generating Station

Parent Company: Puget Sound Energy

Unified Business Identification Number: 602-334-510

Standard Industrial Classification Code: 4911

ORIS Code: 55482

Source Location: 600 Industrial Way
Goldendale, Washington 98620
Klickitat County, Washington
SE ¼ of SW ¼ & SW ¼ of SE ¼ Section 20, T. 4 N., R. 16 E., W.M.

Mailing Address: Puget Sound Energy
PO Box 97034 PSE-04S
Bellevue, WA 98004-97034

Responsible Official/
Designated Representative: L.E. Odom
Director, Thermal and Wind Assets
Puget Sound Energy
PO Box 97034 PSE-04S
Bellevue, WA 98004-97034
Phone: 425-462-3144
Fax: 425-462-3223
Email: ed.odom@pse.com

Alternate Responsible Official/
Designated Representative:

Gerald Klug
Plant Manager, Goldendale Generating Station
Puget Sound Energy
PO Box 190
Goldendale, WA 98620
Phone: 509-773-7913
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Additional Contacts: James Wells
Site Contact
Compliance Manager
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Ben Farrow
Corporate Contact
Phone: 425-456-2541
Email: benjamin.farrow@pse.com

Basis for Title V Operating Permit Applicability:
This is an "affected source" regulated under Title IV of the Federal Clean Air Act.

Basis for Title IV Acid Rain Program Applicability:
This unit is a new utility unit, per 40 CFR 72.6(a)(3).

Attainment Classification:
This affected source is located in an area that is unclassified for all criteria pollutants.

Timeline

See also sections 6.0 and 7.0 (below).

July 6, 2005 – Ecology received initial complete Title V Air Operating Permit application and renewal Title IV Phase II Permit application

January 4, 2006 – Ecology issued Draft Title V Air Operating Permit & began public comment period. January 10, 2006 – Notice of Draft Permit published in Permit Register. January 12, 2006 – Notice of Draft Permit published in Goldendale Sentinel. February 13, 2006 – End of public comment period.

October 10, 2006 – Ecology issued Proposed Title V Air Operating Permit

December 4, 2006 – Ecology received notice from EPA that, “[t]he permit is now eligible for issuance.”

March 15, 2007 – Ecology received notice of transfer of ownership from Goldendale Energy Center LLC to Puget Sound Energy

August 23, 2007 – Ecology received notification of a change of responsible official/designated representative

October 23, 2007 – Ecology issued an administrative amendment to update responsible official/designated representative

October 24, 2008 – Ecology received notification of a change in the tested load allowed under condition 5.2.7

[December 23, 2008 – Ecology issued an administrative amendment to update the load allowed under condition 5.2.7](#)

[November 12, 2010 – Ecology received a request to revised the ammonia emission limits in NOC No. 01AQCR-2037 Second Revision](#)

[December 21, 2010 – Ecology received notification of the addition of an alternate responsible official/designated representative](#)

[January 12, 2011 – Ecology received fully signed copy of Certificate of Representation](#)

3.0 INTRODUCTION

This document sets forth the legal and factual basis for the permit conditions in a Title V Air Operating Permit and a Title IV Phase II Acid Rain Permit issued by the State of Washington Department of Ecology for the Goldendale Generating Station (GGS) located in Goldendale, Washington. This document, called a “statement of basis,” does not contain enforceable permit conditions, only supplemental description and explanation. Enforceable permit conditions are contained in the combined Title V Air Operating Permit and a Title IV Phase II Acid Rain Permit itself.

4.0 SOURCE DESCRIPTION

The Goldendale Generating Station is a combined cycle natural gas-fired electrical generating facility. It consists of a combustion gas turbine-driven generator and a steam turbine driven generator. The GE Frame 7FA combustion turbine and supplemental duct burners burn only natural gas; no backup fuel is allowed. The exhaust heat from the combustion turbine flows to a heat recovery steam generator (HRSG) to produce steam. Steam is directed to the steam turbine, which turns a steam turbine generator. Steam exhausted by the steam turbine generator flows to a cooling tower and/or air-cooled condenser, is condensed, and returned to the HRSG. The HRSG is equipped with a 323 million Btu/hr (LHV) duct burner that produces up to 40 MW. Since performance of the combustion turbine declines as ambient air temperature increases, the maximum duct burner contribution of 40 MW will occur when the ambient site temperature reaches its maximum (about 110 °F.) The GGS has a maximum annual average generating capacity in the range of 247,800 kilowatts (kW) to 248,700 kW. This generating capacity is measured as the maximum continuous electric generating capacity less minimum auxiliary load.

Selective catalytic reduction (SCR) is installed at the appropriate section of the HRSG to minimize NO_x emissions from the combustion turbine. An aqueous ammonia tank supplies the HRSG unit with ammonia for use with the SCR. An oxidation catalyst is also installed in the HRSG to oxidize carbon monoxide (CO) and, to a lesser extent, volatile organic compounds (VOCs), to carbon dioxide (CO₂).

Additional emission units include a 300 horsepower (hp) diesel engine, to start automatically should a demand for water for fire suppression occur simultaneously with a loss of electric power and a 536 hp (400 kW) diesel backup generator, to supply critical AC loads during emergency situations. Particulate matter emissions are also anticipated from two cooling towers. A site map and a source flow diagram of the source are included herein, as Figures 1 and 2, respectively. Additionally, the source's potential air emissions are listed in Table 1.

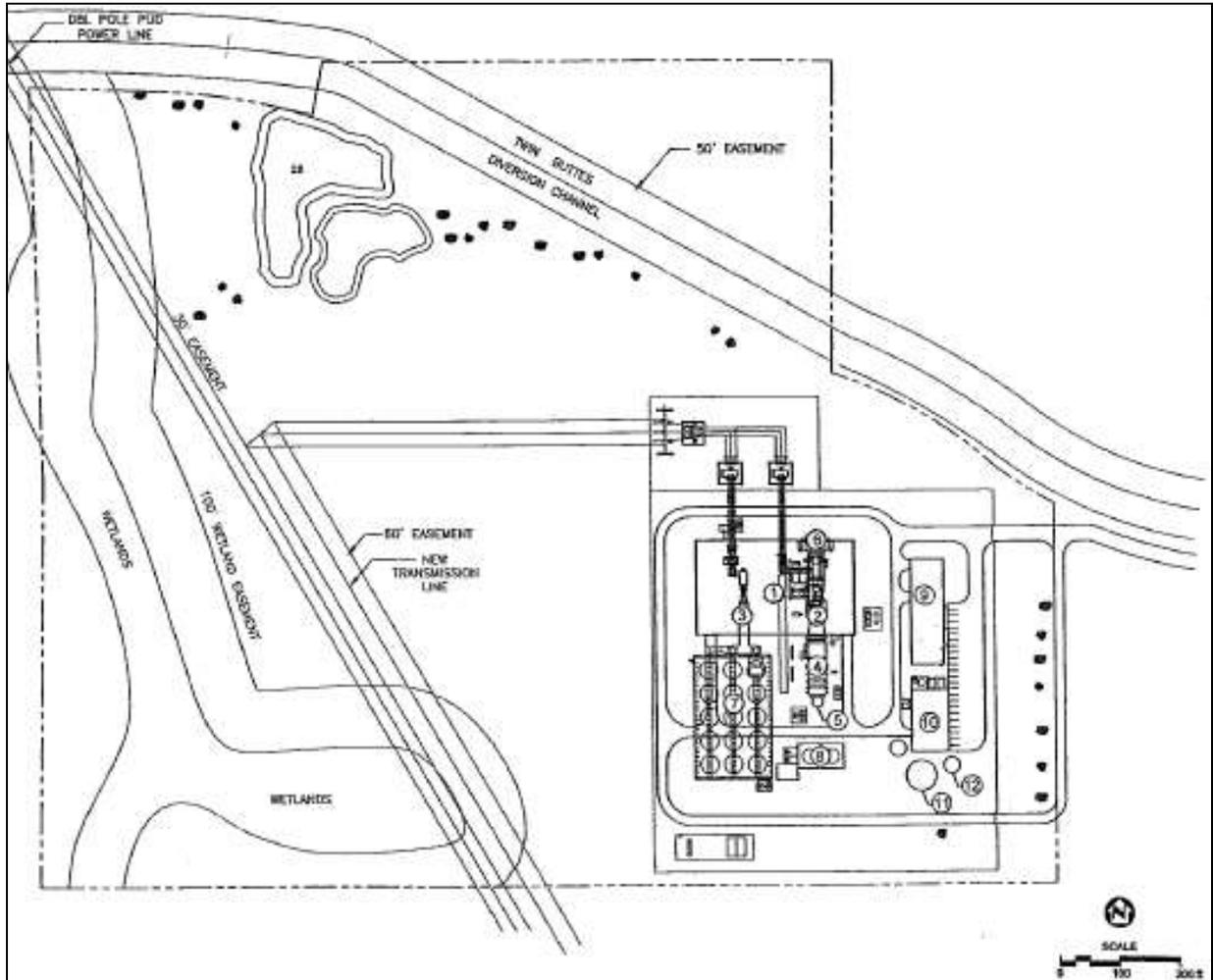


Figure 1. Site map of Goldendale Generating Station, Structures include: (1) turbine/generator building (2) gas combustion turbine (3) steam turbine (4) HRSG (5) exhaust stack (6) air inlet filter (7) air cool condensers (8) cooling tower (9) administration/maintenance building (10) pump house/water treatment building (11) service/fire water tank (12) demin water storage tank (adapted from AOP application received 5/26/05 from Geomatrix Consultants).

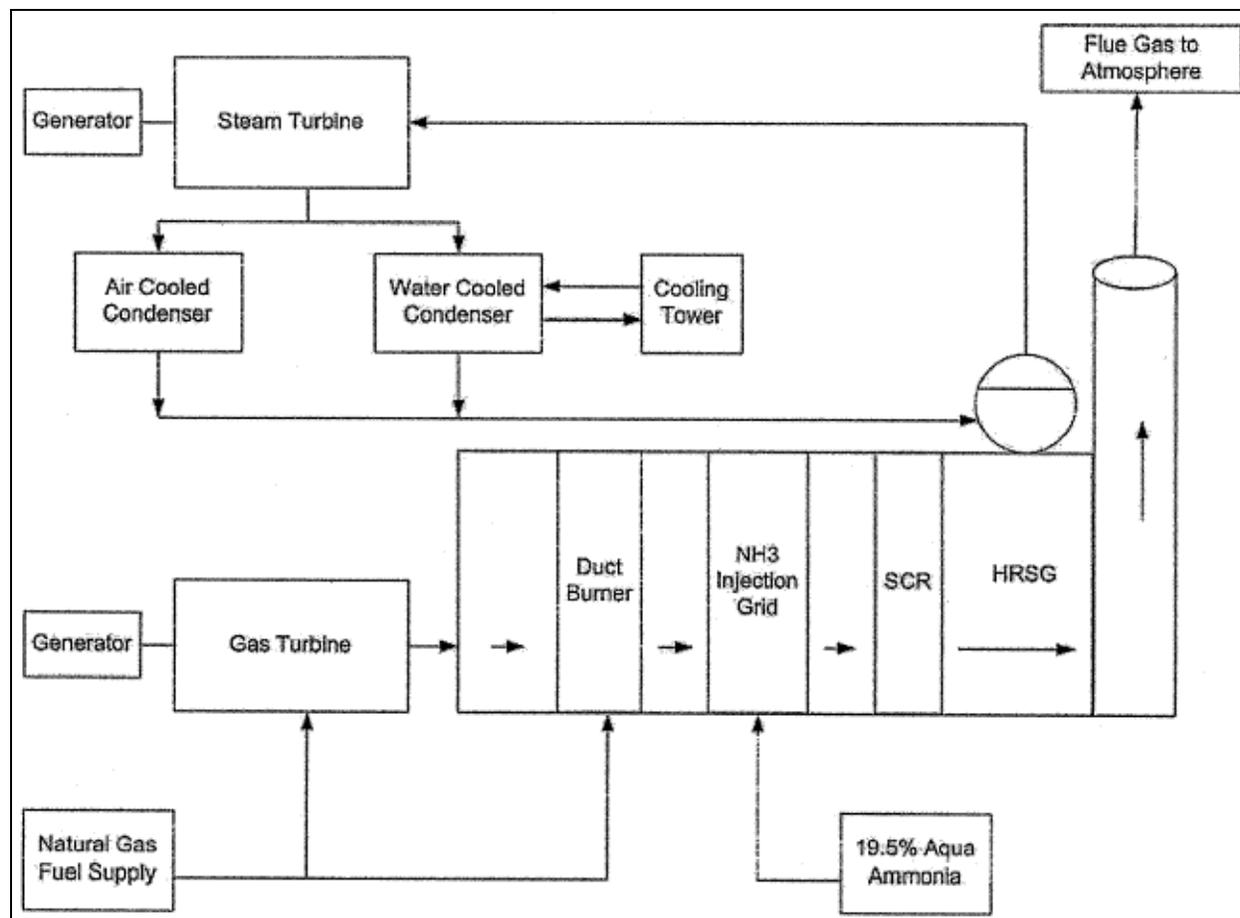


Figure 2. Goldendale Generating Station source flow diagram (adapted from AOP application received 5/26/05 from Geomatrix Consultants).

Table 1. Summary of potential emissions (tons per year) from Goldendale Generating Station.

Pollutant	Combined Cycle Unit	Firewater Pump	Backup Generator	Cooling Tanks	TOTAL
TSP	91.9	0.2	0.3	6.5	98.9
PM₁₀	91.9	0.2	0.3	6.5	98.9
PM_{2.5}	91.9	0.2	0.3	6.5	98.9
SO₂	25.5	0.2	0.3		30
CO	82.27	0.5	0.9		83.7
NO_x	70.2	2.3	4.2		76.7
VOC	41.54	0.2	0.4		42.2
Acetaldehyde	1.545	0.000403	0.000725		1.55
Ammonia	34.51 57.51				34.5157.51
Benzene	0.1594	0.00049	0.000875		0.1608
Formaldehyde	1.977	0.00062	0.0011		1.978
PAH	0.006657	0.0000875	0.00015		0.007
Propylene Oxide	481.8				0.2409
Sulfuric Acid Mist	6.2				6.2

Within the permit, the applicable requirements are broken down into tables, each containing a specific process, including:

Process #1, Source-wide: Addresses source-wide emission sources, including all significant and insignificant emission units and fugitive emissions. Permit Table 5.1, includes applicable requirements that apply source-wide, including the units specifically addressed in processes 2 through 6.

Process #2, Combustion turbine

Process #3, Duct burner

Process #4, Combined cycle unit: Addresses the requirements that apply to the collective combined cycle unit, made up of the gas combustion turbine, heat recovery steam generator, duct burner, selective catalytic reduction unit, and the steam turbine, which all share a single exhaust stack. The combined cycle unit has two sets of emissions units. Applicable requirements that apply at all times, during operation at base load (i.e., duct burner NOT in use), and during operation at peak load (i.e., duct burner in use), are specified in Permit Tables 5.4, 5.4a, and 5.4b, respectively.

Process #5, Backup generator

Process #6, Firewater pump

Insignificant emission units are listed in section 11.0.

5.0 NEW SOURCE REVIEW HISTORY

In Washington State, new sources of air pollutants are potentially subject to four types of new source review (air quality permitting). Federal new source review includes Prevention of Significant Deterioration (Title 40 Code of Federal Regulations Part 52.21) and Nonattainment New Source Review (Title 40 Code of Federal Regulations Part 52.24). These Federal programs apply to large sources with potential emissions equal or greater than specified thresholds. Additionally, State new source review, referred to as Notice of Construction permitting, applies to smaller sources, and the lesser emissions at the larger sources. Notice of Construction permitting may be required for criteria pollutants (WAC 173-400-110) and/or toxic air pollutants (WAC 173-460-030).

Installation and operation of the Goldendale Generating Station was originally approved under Notice of Construction Order No. 01AQCR-2037, issued December 18, 2000.

Following issuance of this Order, it came to general attention that the sulfur content of the natural gas, used in much of Washington State including that used by Goldendale Generating Station, is greater than had been previously recognized. To remedy this situation, and minimize the potential for underestimating emissions, the permittee requested, and Ecology granted, a revision to reflect higher potential sulfur emissions. Notice of Construction Order No. 01AQCR-2037 First Revision, was issued on August 22, 2003.

On March 22, 2004, Ecology received a request to revise conditions pertaining to generating capacity, monitoring of nitrogen content of the fuel, flow monitoring, addition of a shutdown exemption, operating load restrictions, and number of allowed startups. Ecology granted requested revisions. No change in potential emissions was authorized in Notice of Construction Order No. 01AQCR-2037 Second Revision, issued on January 13, 2005.

On November 12, 2010, Ecology received a request to revise the ammonia emission limits. Puget Sound Energy stated that there is an increase in the need for partial load and swinging load operation of the Goldendale Generating Station, largely due to changes in power generation in the region, such as added wind power. They stated that the restrictive ammonia emission limits prevent them from operating the plant as needed to accommodate these transient load conditions. They demonstrated that the requested change is well within accepted Best Available Control Technology limits and that ambient impacts are below the Acceptable Source Impact Level. The change results in an increase in potential ammonia emissions of 23 tons per year. Ecology proposes to grant the ammonia slip increase from 3 ppm (1-hr average) to 5 ppm (3-hr average).

6.0 AIR OPERATING PERMIT HISTORY

Title V of the 1990 Federal Clean Air Act Amendments required all states to develop a renewable operating permit program for industrial and commercial source of air pollution. Congress structured the air operating permit system as an administrative tool for applying existing regulations to individual sources. The goal is to enhance accountability and compliance by clarifying in a single document which requirements apply to a given business or industry.

The Washington State Clean Air Act (Chapter 70.94 Revised Code of Washington) was amended in 1991 and 1993 to provide the Department of Ecology and local air agencies with the necessary authority to implement a state-wide operating permit program. The law requires all sources emitting one hundred tons or more per year of a criteria pollutant, or ten tons of a hazardous air pollutant, or twenty-five tons in the cumulative of hazardous air pollutants, to obtain an operating permit. Criteria pollutants include sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, and volatile organic compounds.

Ecology authored Chapter 173-401 of the Washington Administrative Code (WAC), which specified the requirements of Washington State's Operating Permit Regulation. This regulation became effective on November 4, 1993. On November 1, 1993, this regulation was submitted to the United States Environmental Protection Agency (EPA), for program approval. On December 9, 1994, EPA granted interim approval of Chapter 173-401 WAC. This interim approval was extended until EPA granted final approval on August 13, 2001. The current version of this regulation was filed on September 16, 2002.

Goldendale Energy Center became a chapter 173-401 Operating Permit source upon commencement of operation on July 10, 2004. Their complete initial application was due on July 9, 2005. An incomplete application was received by Ecology on May 26, 2005. Additional information was received on July 6, 2005, and Ecology deemed the application complete on July 8, 2005. As a complete and timely permit application was received, Goldendale Energy Center LLC retained their permission to operate while the permit was being processed.

See also "Timeline" in section 2.0.

6.1 PUBLIC PARTICIPATION

The processing of this Air Operating Permit included a 30-day review and comment period on the draft permit. Notice of the comment period was published in The Goldendale Sentinel and Ecology's Permit Register. Additionally, notice of the comment period was made through postal mail to the facility, eleven individuals, who had requested to be on the mailing list for this specific facility, seven "affected states" (i.e., Confederated Tribes of the Warm Springs Reservation, Yakama Nation Confederated Tribes, Department of Natural Resources, Southwest Clean Air Agency, Yakima Regional Clean Air Authority, Benton Clean Air Authority, Oregon Department of Environmental Quality), and the United States Environmental Protection Agency.

Following the draft comment period, Ecology considered all comments received prior to issuance of the proposed permit. Additionally, Ecology will keep a record of the commentors and issues raised during the public participation process. Records are contained in the Ecology Air Quality Program maintained facility file and following.

Comments on the draft permit were received from Calpine, Friends of the Columbia Gorge and Vivian and Bill Camerer. Following are the comments received and Ecology's responses:

Used Oil:

Comment: Please remove Condition 5.1.2. GEC has not purchased used oil and has no plans to do so in the future.

Therefore, used oil standards are not applicable to this facility. [Calpine]

Response: This Condition was removed, as GEC does not burn used oil. If GEC should ever burn used oil, RCW 70.94.610, may be found to be applicable.

Sulfur Testing:

Comment: Conditions 5.4.10 and 5.4.12 require source testing for SO₂ and sulfuric acid mist. Condition 3.5.10 of the NOC allows for the use of alternative test methods upon Ecology approval. GEC requests that Ecology grant the use of alternative methods directly in the Operating permit. For SO₂ testing, GEC proposes calculating the emissions based on 100% conversion of fuel gas sulfur to SO₂. The resulting emissions would be worst-case calculation. For sulfuric acid mist, GEC proposes calculating the emissions based on the EPA guidance document for toxic release inventory reporting, "Emergency Planning and Community Right-to-Know Act -Section 313 Guidance for Reporting Sulfuric Acid". This method assumes that 5% of the total sulfur present in the fuel gas is converted to sulfuric acid mist. [Calpine]

Response: An alternative method has been approved and specified within the Air Operating Permit. The alternative methods are not as requested above. Instead, the methods approved for 2006 testing shall be used. Sulfur dioxide will be determined according to EPA Method 6. Total sulfur oxides (SO_x) will be determined based on the sulfur content of the fuel and the fuel flow rate data according to a modified version of ASTM Method D-

5504. Sulfur acid mist emissions will be determined by subtracting the SO₂ emissions, per Method 6, from total SO_x emissions, based on the fuel sulfur analysis.

Part 75 CEMS:

Comment: Conditions 5.4.2 and 5.4.7 refer to CEMS quality assurance procedures for CO and NH₃ analyzers.

Both conditions reference Part 75 regulations. Because Part 75 does not regulate either CO or NH₃ analyzers, reference to the Part 75 regulations should be deleted. [Calpine]

Response: The reference to 40 CFR Part 75 is removed from Conditions 5.4.2 and 5.4.7.

NSPS Subpart GG:

Comment: Condition 5.2.2 refers to WAC 173-400-115(1)(a) and requires GEC to comply with an outdated version of 40 CFR Part 60 Subpart GG requirements. GEC requests that the permit be streamlined such that WAC 173-400-115(1)(a) is subsumed by the current 40 CFR Part 60 Subpart GG regulations. The emission limitation requirements in Subpart 60 have remain unchanged. However, the fuel gas sulfur sampling requirements have been revised. Daily monitoring of the fuel gas nitrogen and sulfur content is no longer required. This monitoring was previously required as a method to ensure compliance with the SO₂ emission limit. Nitrogen sampling is now only required for units that claim an allowance for fuel bound nitrogen (40 CFR Part 60.334(h)(2)), and GEC does not claim an allowance. 40 CFR Part 60.334(h)(3) states that units may elect not to monitor the fuel sulfur content if it is demonstrated to have less than 20 grains sulfur per 100 scf and is comprised of more than 70[%] methane, “regardless of whether an existing custom schedule ap[p]roved by the administrator for Subpart GG requires such monitoring”. Further, GEC has demonstrated these requirements by complying with 40 CFR Part 75 section 2.3.1.4 (40 CFR Part 60.334(h)(3)(ii)). [Calpine]

Response: No change has been made. Both the “outdated” version and new version of 40 CFR Part 60 Subpart GG currently apply to the stationary gas turbine. (Note: Ecology has adopted the “outdated” version and thus it is currently a State regulation.) Ecology is planning to update the adoption date, of Subpart GG, found in WAC 173-400-115. The update is not expected occur prior to issuance of this permit. When the update occurs, the Air Operating Permit may be revised to delete any requirements that no longer apply. Please note that daily monitoring of fuel gas nitrogen and sulfur content are not (and were not previously) required of this facility. The applicant must continue the custom sulfur monitoring, approved by Letter Re: NSPS Subpart GG Alternative Monitoring and Testing Approval, dated June 16, 2004, from USEPA Region 10 to Steve Royall, Goldendale Energy Center.

Visibility:

Comment: Friends is concerned about the declining air quality of the Columbia River Gorge National Scenic Area.

The Goldendale Energy Project may adversely impact visibility in the National Scenic Area. [Friends]

Response: During the State Environmental Policy Act process, carried out in 2000, visibility impacts were studied, by MFG, Inc., a consulting firm retained by Calpine Corporation. The study predicts that a perceptible change in visibility could occur in the Columbia Hills, located about 15 miles from the power plant. The visibility in the rest of the Columbia Gorge will not be noticeably affected, according to this study.

Management Plan:

Comment: State and federal agencies are currently working on a plan to improve Gorge air quality. These efforts might be jeopardized by inadequate oversight of power plant emissions. DOE should ensure that the permit for the Goldendale Energy Center will not conflict with the Management Plan, which states that “air quality shall be protected and enhanced, consistent with the purposes of the Scenic Area Act.” [Friends]

Response: Ecology strives to administer its permit programs in accordance with the letter and intent of applicable laws. If projects meet the criteria spelled out in the law for approval, Ecology has neither the authority nor the desire to stop permitting them. This facility has met the criteria spelling out under the Washington Clean Air Act.

Permit Status:

Comment: As I understand, you will give no more permits to Goldendale Energy Center. Is this for one year, forever or how long? Are you at the top of how much Acid Rain & Sulfur dioxide Ecology will allow the (GEC) to put into Our Air? [Camerer]

Response: Ecology is not sure where the belief that no more permits would be issued. This Air Operating Permit combines all of Goldendale Energy Center’s applicable air quality requirements, and the required monitoring, recording keeping and report, into this single permit. The Air Operating Permit is valid for a term of five years, after which time it must be renewed. The permit may be revised during its five year term.

Health Sensitivity:

Comment: Personally I cannot stand as much of these emissions as the average person can stand without causing me more health problems. I'm not the only one in this area who has a condition of this nature so yes I want you to keep my name, Vivian Camerer on this list, keep me informed, please answer this letter and my questions. [Camerer]

Response: A totally air emission-free environment is probably not achievable, but we do have laws and regulations to limit the risks. Ecology believes it has correctly implemented those laws and regulations in the case of the air quality permits issued to the Goldendale Energy Center power plant.

Bankruptcy:

Comment: I heard on the radio where Cal-pine is going bankrupt – What does that mean for our local plant here? Is this a ploy to get more money from the federal gov., maybe they get help to dirty our air here in Goldendale even more – I'm not sure – please fill me in? [Camerer]

Response: Ecology heard of Calpine's bankruptcy filing, but has no insight into the Calpine's motivation or intent. The facility's air quality permit remain valid, as long as timely payment of permitting fees are received.

7.0 ACID RAIN PROGRAM HISTORY

The overall goal of the Acid Rain Program is to achieve significant environmental and public health benefits through reductions in emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x), the primary causes of acid rain. To achieve this goal at the lowest cost to society, the program employs both traditional and innovative, market-based approaches for controlling air pollution. In addition, the program encourages energy efficiency and pollution prevention.

Specifically, Title IV of the 1990 Federal Clean Air Act Amendments set a goal of reducing annual SO₂ emissions by 10 million tons below 1980 levels. To achieve these reductions, the law required a two-phase tightening of the restrictions placed on fossil fuel-fired power plants.

Phase I began in 1995 and affected mostly coal-burning electric utility plants. Phase II, which began in the year 2000, tightened the annual emissions limits imposed on the large, higher emitting Phase I plants and also set restrictions on smaller, cleaner plants fired by coal, oil, and gas. The program affects existing utility units serving generators with an output capacity of greater than 25 megawatts and all new utility units.

The GGS is an "affected source," subject to Phase II of the acid rain program, due to the presence of the natural gas fired combustion engine. The natural gas fired combustion engine and the auxiliary duct burner are one affected unit. The affected unit commenced operation on July 10, 2004. The affected unit commenced commercial operation on August 9, 2004. Initial monitor certification occurred during August 28 through 30, 2004. (The deadline for monitor certification was November 8, 2004.)

The Acid Rain Program introduces an allowance trading system that harnesses the incentives of the free market to reduce pollution. EPA holds an allowance auction annually. The auctions help to send the market an allowance price signal, as well as furnish utilities with an avenue for purchasing needed allowances. Acid rain permits require that each unit account hold a sufficient number of allowances to cover the unit's SO₂ emissions in each year, comply with the applicable NO_x limit, and monitor and report emissions. GGS has the potential-to-emit thirty (30) tons per year of SO₂ emissions; the source will be required to hold a maximum of thirty (30) SO₂ allowances.

Under the Acid Rain Program, each unit must continuously measure and record its emissions of SO₂, NO_x, and CO₂, as well as volumetric flow and opacity. In most cases, a continuous emission monitoring (CEM) system must be used. There are provisions for initial equipment certification procedures, periodic quality assurance and quality control procedures, recordkeeping and reporting, and procedures for filling in missing data periods. Units report hourly emissions data to EPA on a quarterly basis. This data is then recorded in the Emissions Tracking System, which serves as a repository of emissions data for the utility industry. The emissions monitoring and reporting systems are critical to the program. They instill confidence in allowance transactions by certifying the existence and quantity of the commodity being traded and assure that NO_x averaging plans are working. Monitoring also ensures, through accurate accounting, that the SO₂ and NO_x emissions reduction goals are met.

Since GGS is not coal-fired, there are no applicable acid rain NO_x emission limits; a Phase II NO_x permit application and ozone monitoring are not required. GGS utilizes CEMS for NO_x, and O₂, to comply with the acid rain program. Instead of using a SO₂ CEMS, GGS provides other information satisfactory to EPA using the applicable procedures specified in 40 CFR Part 75 appendix D, for estimating hourly SO₂ mass emissions. GGS's CO₂ mass emissions are determined using an O₂ monitor according to 40 CFR Part 75 appendix F.

Opacity monitoring is not required at GGS and SO₂ monitoring will be met according to 40 CFR Part 75 appendix D, so moisture measurement is not required. Additionally, because NO_x mass emission rates will be obtained according to 40 CFR Part 75 appendix F, volume flow rate measurement is not required, under the Acid Rain Program.

Each source appoints one individual, the Designated Representative, to represent the owners and operators of the source in all matters relating to the holding and disposal of allowances for its units that are affected by the Clean Air Act. The Designated Representative is also responsible for all submissions pertaining to permits, compliance plans, emission monitoring reports, offset plans, compliance certification, and other necessary information. A source may appoint an Alternate Designated Representative to act on behalf of the Designated Representative.

Ecology received GGS's initial complete Title IV Phase II Permit Application and Certificate of Representation on February 28, 2001, and issued their initial Phase II Acid Rain Permit No. 02AQCR-4524, on July 15, 2002. The Permit underwent administrative amendments, updating designated representatives, company name, or the new unit commence operation date, on June 11, 2003, November 25, 2003, September 2, 2004, and November 19, 2004.

Additional information on the Title IV permitting, monitoring, or reporting can be located on EPA's Clean Air Market's Division webpage (<http://www.epa.gov/airmarkets/forms/index.html#arp>).

Figure 3, displays GEC's renewal *Acid Rain Permit Application*. Figure 4, displays GGS's most recent *Certificate of Representation*.

See also "Timeline" in section 2.0.

CAR 160, ozone season allowances and proceeds of transactions involving CAR 160, Ozone Season allowances will be deemed to be held or distributed in proportion to each holder's legal, negotiable, ownership, or contractual reservation or entitlement, except that, if such change constitutes an event (provided for in the written instrument of CAR 160, ozone season allowances by contract, CAR 160, Ozone Season allowances and proceeds of transactions involving CAR 160, Ozone Season allowances will be deemed to be held or distributed in accordance with the contract.

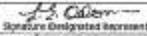
Goldendale Generating Station

Part 1 (Owner/Operator Name Box 1)

Continuation of Representation - Page 3

DECLARATION

I am authorized to make this submission on behalf of the owners and operators of the source or unit for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all attachments, and the inquiry of those individuals with primary responsibility for obtaining the information. I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

 Signature Authorized Representative	DATE 01/05/2011
 Signature Authorized Representative	DATE 07-22-2010

WPA Form 160-1 (Revised 02/2006)

WPA Form 160-1 (Revised 02/2006)

Figure 4. GGS's most recent *Certificate of Representation*, received 8/23/07/1/12/11.

8.0 NEW SOURCE PERFORMANCE STANDARDS

GGG is subject to Title 40 Code of Federal Regulations (CFR) Part 60, Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978*, and; Title 40 CFR Part 60, Subpart GG, *Standards of Performance for Stationary Gas Turbines*.

8.1 Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978. [Title 40 Code of Federal Regulations (CFR) Part 60, Subpart Da] The boiler NSPS establishes standards for particulate matter, SO₂, and NO_x for units combusting gaseous fuels which are capable of combusting more than 73 megawatts (250 million Btu/hr) heat input for which construction commenced after September 18, 1978. Since the duct burner has a firing capacity of 323 million Btu/hr (LHV) and is not covered by Subpart GG, it is subject to this standard.

8.2 Standards of Performance for Stationary Gas Turbines. [Title 40 CFR Part 60, Subpart GG] The gas turbine NSPS establishes NO_x and SO₂ emission standards for all new stationary gas turbines with a heat input at peak load greater than 10.7 gigajoules per hour based on the lower heating value of the fuel fired. The rated heat input of the combustion turbine at peak load including duct burner firing is approximately 2,012 gigajoules per hour, and is therefore subject to this standard. Figure 5, displays GGS's approval to perform alternate testing and approval methods.

Note: Subpart GG was revised on July 8, 2004. However, the revision is not currently in effect within Ecology's jurisdiction, as WAC 173-400-115(1), adopts by reference Subpart GG as it was in effect on July 1, 2004.



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



Reply To
Asta GC GAG-107

June 16, 2004

Steve Royall
Plant Manager
Goldendale Energy Center
P.O. Box 190
Goldendale, Washington 98620

Re: NSPS Subpart GG Alternative Monitoring and Testing Approval

Dear Mr. Royale:

The purpose of this letter is to respond to your May 25, 2004, request that the United States Environmental Protection Agency (EPA) approve alternative monitoring and testing methods for a combustion turbine recently installed at Goldendale Energy Center in Goldendale, Washington. The turbine is subject to the requirements of NSPS Subpart GG - Standards of Performance for Stationary Gas Turbines. As described below, EPA approves your request.

Request 1: Waiver from Nitrogen Monitoring - Pipeline Quality Natural Gas

Under the provisions for 40 C.F.R. Section 60.334(b)(2), owners and operators of combustion turbines who do not have intermediate bulk storage for the fuel fired in their turbines are required to conduct daily monitoring to determine the sulfur and nitrogen content of the fuel combusted. Under the terms of the August 14, 1987 custom fuel monitoring policy issued by EPA Headquarters, the nitrogen monitoring requirement for pipeline quality natural gas-fired turbines can be waived because this fuel does not contain fuel-bound nitrogen and any free nitrogen that it may contain does not contribute appreciably to the formation of nitrogen oxides (NO_x) emissions. Based upon the precedent set in the August 1987 custom fuel monitoring policy, the requirement to monitor the nitrogen content of pipeline quality natural gas is waived.

Request 2: Custom Fuel (Sulfur) Monitoring Schedule - Pipeline Quality Natural Gas

EPA's August 1987 custom fuel monitoring policy also provides details regarding a procedure that owners and operators of natural gas-fired turbines can follow in order to obtain approval to reduce their sulfur analysis frequency from a daily to a semiannual basis. Under this policy, owners and operators of affected facilities can obtain approval for a semiannual monitoring frequency by collecting and analyzing samples under the following schedule:

1. Samples must initially be collected and analyzed twice a month for six months. If six months of bi-monthly sampling and analysis indicate that sulfur concentrations are well below the applicable standard with low variability, the sampling frequency can be reduced to a quarterly basis.
2. If six quarters of quarterly sampling and analysis indicate that sulfur concentrations are well below the applicable standard with low variability, the sampling frequency can be reduced to a semiannual basis.
3. If any analyses indicate noncompliance with the applicable sulfur limit of 0.8 weight percent in 40 C.F.R. Section 60.333(b), samples must be collected and analyzed on a weekly basis while the custom fuel monitoring schedule is re-examined.
4. If there is a substantial change in fuel quality, samples must be collected and analyzed on a weekly basis while the custom fuel monitoring schedule is re-examined.

The schedule you have proposed is consistent with, if not identical to, EPA's August 1987 custom fuel monitoring policy. The custom fuel monitoring schedule that you have proposed is approved.

Request 3: Waiver from Multiple Load Testing

Under the provisions of 40 C.F.R. Section 60.335(c)(2), owners and operators of combustion turbines subject to Subpart GG must conduct NO_x performance testing at four different loads across the unit operating range. One reason for conducting a multiple load test on a combustion turbine is to determine the water injection rate needed to maintain NO_x compliance across the unit's normal operating range. Since it is difficult to predict which operating load will represent "worst case" conditions for a combustion turbine, conducting a multiple load test is often necessary in order to provide an adequate level of compliance assurance even for turbines that do not use water injection for NO_x control. For combustion turbines equipped with NO_x CEMS, however, the monitors will provide credible evidence regarding the unit's compliance status on a continuous basis following the initial test.

Achieving and maintaining compliance with Washington minor NSR BACT NO_x limits is far more challenging than demonstrating initial compliance with the considerably less stringent Subpart GG emission limit. Depending on the type of turbine, the applicable NO_x standard in Subpart GG is either 75 parts per million (ppm) or 150 ppm, and limits contained in Washington minor NSR permits being issued today are often less than 10 ppm. The combustion turbine at Goldendale Energy Center is limited to 2 ppm. Compliance with Subpart GG limits will generally be a concern only in cases where a source is in violation of the corresponding minor NSR BACT limit.

The level of compliance assurance provided in this case is sufficient to justify approval of a request that initial performance testing be allowed at full operating load. Your proposal to conduct performance testing at full load is approved.

Request 4: Reporting NO_x Emissions Data in ISO Conditions

The testing provision in 40 C.F.R. Section 60.335(c)(1) requires that performance test results be corrected to International Standards Organization (ISO) standard day conditions. CEMS results must also be expressed on this same basis in order to conclusively identify periods of excess emissions. As discussed previously, NO_x limits for combustion turbines subject to Washington minor NSR BACT are considerably more stringent than those in Subpart GG. Typically these minor NSR BACT limits are not expressed on an ISO-corrected basis.

Again, the level of compliance assurance provided in this case is sufficient to justify waiving requirement to report NO_x performance test results on an ISO-corrected basis. The requirement to report NO_x performance test results on an ISO-corrected basis is waived. Goldendale Energy Center, however, is expected to keep records of the data (ambient temperature, ambient humidity, and combustor inlet pressure) needed to make the correction.

Please direct your questions regarding this determination to Dan Meyer of my staff at 206.553.4150.

Sincerely,

Marionna Naway Acting
Jeff KenKnight, Manager
Federal and Delegated Air Programs Unit

cc: ✓Lynette Haller, Ecology
Eric Hansen, MFG

Figure 5. Subpart GG alternate testing and approval methods.

9.0 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

GGs is NOT subject to *Title 40 Code of Federal Regulations (CFR) Part 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters*, or; *Title 40 CFR Part 63 Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*.

9.1 National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters. [Title 40 Code of Federal Regulations Part 63 Subpart DDDDD] The boiler NESHAP applies to industrial, commercial, or institutional boilers or process heaters, located at, or are part of, a major source of hazardous air pollutants. GGS is not a major source of hazardous air pollutants.

9.2 National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. [Title 40 Code of Federal Regulations Part 63 Subpart YYYY] The combustion turbine NESHAP establishes national

emission limitations and operating limitations for hazardous air pollutants emissions from stationary combustion turbines located at major sources of hazardous air pollutants emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. The turbine NESHAP applies to stationary combustion turbines located at a major source of hazardous air pollutants emissions. GGS is not a major source of hazardous air pollutants.

10.0 COMPLIANCE ASSURANCE MONITORING (CAM).

On October 22, 1997, EPA promulgated the Compliance Assurance Monitoring rule (Title 40 Code of Federal Regulations Part 64). This Rule requires specialized pollutant-specific monitoring for those emission units which meet the following criteria:

1. The unit is located at a Title V Air Operating Permit source
2. The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or surrogate thereof), other than an emission limitation or standard that is exempt.
3. The unit uses a control device to achieve compliance with any such emission limitation or standard; and
4. The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as an Air Operating Permit source.

The combustion turbine is the only emission unit at GGS that meets all four of the listed criteria for CAM applicability. NO_x and CO are subject to emission limitations, are controlled by control devices, and have potential pre-control device emissions greater than 100 tons per year. However, 40 CFR 64.2(b)(1)(vi), specifies that CAM requirements are not applicable to emission limitation or standard for which an AOP specifies a continuous compliance determination method (ex. CEMS). The AOP specifies that both NO_x and CO be monitored using a CEMS. Therefore, CAM does not apply at GGS.

11.0 INSIGNIFICANT EMISSION UNITS AND ACTIVITIES

Emissions from an oil/water separator, fuel oil (#2 diesel) piping and natural gas piping are insignificant on the basis that these activities generate only fugitive emissions. [WAC 173-401-530(1)(d), 9/16/02] *Note: WAC 173-400-030(38), defines fugitive emissions as, "emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening."*

The cooling tower, the demin water storage tank, the service/fire water tank, and waste oil drums are categorically exempt insignificant emission units. [WAC 173-401-532(4), (42), (121), 9/16/02] Finally, 9,000 gallon 19.5 percent aqueous ammonia storage tank is insignificant on the basis of size. [WAC 173-401-533(2)(s), 9/16/02]

12.0 GAPFILLING

Section 5 of the air operating permit identifies requirements that are applicable to existing emission units at the source. The air operating permit must contain emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. Where the applicable requirement does not require periodic testing or monitoring, periodic monitoring sufficient to yield reliable data has been identified and included in the permit. This action is termed gapfilling.

The last column of the tables in section 5, contain the monitoring, recordkeeping, and reporting to be performed by the permittee (MRR). This column identifies the periodic action that must be taken to demonstrate compliance with the applicable requirement. It should be noted that in addition to the MRR a source must consider all other credible evidence when certifying to their compliance status.

For some applicable requirements no action is warranted and instead the permittee will annually certify their compliance status. These requirements are identified with, "no additional monitoring required," stated in the MRR column.

Many applicable requirements specified periodic MRR while gapfilling was used for the remainder. The source of the MRR is identified in brackets when it does not come specifically from the identified applicable requirement(s).

Those that reference WAC 173-401-615(1) were gapfilled. Below is a brief explanation of the basis for each instance of gapfilling.

Table 2. Identification and basis of “gapfilled” items.

Applicable Requirement(s)	Gapfilling basis
5.1.22, 5.3.1, 5.3.2, 5.3.3, 5.3.7, 5.4a.1, 5.4a.2, 5.4a.3, 5.4a.4, 5.4a.5, 5.4b.1, 5.4b.2, 5.4b.3, 5.4b.4, 5.4b.5	MRR required for other similar applicable requirement(s) should sufficiently demonstrate compliance with the specified applicable requirement.
5.1.9, 5.1.11	This source has not had a history of violating these "nuisance" requirements. MRR required for other similar applicable requirement(s) should sufficiently demonstrate compliance with the specified applicable requirement.
5.1.2	Simple records, generally already kept, will be helpful in proving such operations.
5.1.4, 5.1.5, 5.1.6	This source has not had a history of visible emissions and is not expected to have problems complying with established visible emission standards. Monthly MRR is determined to be appropriate. Additionally, action is required when visible emissions are observed at times other than the monthly survey.
5.1.21	Development and implementation of these documents fulfill the applicable requirement. Periodic review/inspections will aid in assuring that the documents contents are being followed.

13.0 STREAMLINING

Streamlining is where one or more applicable requirement is recognized as being less stringent than another applicable requirement. Upon a satisfactory showing that one applicable requirement is more stringent, it may formally subsume the less stringent applicable requirement(s). GGS’s AOP does not include any streamlining.

14.0 COMPLIANCE CERTIFICATION

By virtue of the Air Operating Permit application and the issuance of this permit, the reporting frequency for compliance certification for this source shall be annual.

15.0 ENFORCEABILITY

Unless specifically designated otherwise, all terms and conditions of the Air Operating Permit, including any provisions designed to limit the source’s potential to emit, are enforceable by EPA, and citizens, under the Federal Clean Air Act. Those terms and conditions which are designated as state-only enforceable, by (S), are enforceable only by Ecology. It should be noted that state-only terms and conditions will become federally enforceable upon approval of the requirement in the State Implementation Plan. However, the enforceability of the terms and conditions of this Air Operating Permit are not expected to change during the Permit term. All terms and conditions of the Air Operating Permit are enforceable by Ecology.

Following is an example of how to identify a state-only enforceable condition. At the end of Condition 2.7.2, the following notation occurred: “[WAC 173-400-107(3), 8/20/93, 1/10/05 (S)]”. If a version of the regulation is cited with no reference to enforceability, it is federally enforceable. Thus, this notation means that the authority for this permit condition is contained in the 8/20/93 version of WAC 173-400-107 (this is the version of WAC 173-400-107 that is in the SIP and is federally enforceable) and in the 1/10/05 version of WAC 173-400-107. The (S) after 1/10/05 means that the 1/10/05 version of WAC 173-400-107 is State-only enforceable.

16.0 OPERATIONAL FLEXIBILITY

The permittee did not request or specify any alternative operating scenarios. However, the combined cycle unit has two sets of emission limits; one set each of emission units when operating at base-load and at peak-load. Operation

at base-load and peak-load have been identified as alternate operating scenarios. The applicable requirements in Table 5.4a apply when the combined cycle unit is operating at base-load (i.e., duct burner(s) NOT in operation). The applicable requirements in Table 5.4b apply when the combined cycle unit is operating at peak-load (i.e., duct burner(s) in operation).

Additionally, in the event that an emission unit is not operated during a period equal to or greater than the monitoring period designated, no monitoring is required. (ex. A monthly visible emission survey is not required if the emission unit is not operated during the month that the survey covers. A monthly visible emission survey is required if the emission unit is operated for any portion of the month that the survey covers.) Recordkeeping and reporting must note the reason why, and length of time, the emission unit was not operated.