Draft Statement of Basis for
Puget Sound Energy, Inc. – Frederickson Electric Generating Station
AOP Renewal 2
<TBD>

1 Purpose of this Statement of Basis

1.1 General

This document summarizes the legal and factual bases for the draft permit conditions in the Puget Sound Energy, Inc. air operating permit to be issued under the authority of the Washington Clean Air Act, Chapter 70.94 Revised Code of Washington, Chapter 173-401 of the Washington Administrative Code and Puget Sound Clean Air Agency (PSCAA) Regulation I, Article 7. Unlike the permit, this document is not legally enforceable. It includes references to the applicable statutory or regulatory provisions that relate to Puget Sound Energy, Inc. emissions to the atmosphere. In addition, this Statement of Basis provides a description of Puget Sound Energy, Inc. activities and a compliance history.

2 Why Puget Sound Energy, Inc. is an Air Operating Permit Source

Puget Sound Energy, Inc. is subject to the requirement to obtain an air operating permit because it is a "major source" as defined in Title V of the federal Clean Air Act (CAA) Amendments of 1990 and its implementing regulations, 40 CFR Part 70 and Chapter 173-401 WAC. A major source has the potential to emit more than 100 tons per year of any pollutant subject to regulation (CO, SO_2, NO_X, VOC, particulate matter, etc.), 10 tons per year or more of any single hazardous air pollutant (HAP) listed in Section 112(b) of the federal Clean Air Act (such as hydrochloric acid), or 25 tons per year or more of any combination of HAPs.

The facility has the potential to emit more than 100 tons per year of CO and NO_X and therefore is a major source for purposes of the Title V program.

The facility does not emit or have the potential to emit, considering controls, more than 10 tons per year or more of any single hazardous air pollutant (HAP) or 25 tons per year or more of hazardous air pollutants combined. Therefore, the facility is not a major source of HAP as defined by 40 CFR 63.2.

The facility has the potential to emit more than 250 tons per year of NO_X and CO and is a "Major Stationary Source" under the Prevention of Significant Deterioration regulations as defined by 40 CFR 52.21.

3 Source Description

The Puget Sound Energy Generating Station, located in the Port of Tacoma's Frederickson Industrial Park, Pierce County, Washington, has a total generating capacity of approximately 150 MW base load and 178 MW peak cold weather rating. Base load rating is the full load continuous output of the turbine unit at 59°F and sea level (ISO) conditions, while the peak cold weather rating, 28°F and sea level, corresponds to the generating capability designed for use during the maximum load period of a designated time interval under specified weather and atmospheric pressure conditions.

The facility consists of:

- Emission Unit 1: Two natural gas and #2 distillate oil-fired, General Electric (GE) Frame 7, Type 7101E, simple cycle combustion turbine generators (Units 1 and 2), each with a base load rating of 74.7 megawatt (MW) and a peak cold weather rating of 89.4 MW, subject to New Source Performance Standard (NSPS) Subpart GG for combustion turbines.
- Emission Unit 2: Two lube oil tank controlled by two Monsanto Brink fiber bed model Chase 56X108es60-E demisters, rated at 1,500 cfm.

- Emission Unit 3: A Caterpillar 3516B, 2,876 brake horsepower, black start compression ignition reciprocating internal combustion engine (RICE) firing ultra-low sulfur diesel, but is allowed to burn fuel with sulfur up to 0.5% wt sulfur The engine, is used to start the combustion turbines.
- Emission Unit 4: One 4,468,100 gallon above ground, steel fixed roof storage tank holding ultra low sulfur diesel. This tank has no emission unit specific applicable requirements and is covered by the facility-wide requirements. The diesel in this tank is used to fire the gas turbines if PSE is unable to, or chooses to, not use natural gas. The diesel fuel does not meet the definition of "emergency fuel" in the NSPS because it is used at other times other than emergencies.
- Other equipment at the facility that are considered insignificant emission units or do not emit air pollutants:
    - A water treatment system (water injection for NO_X control)
    - An electrical substation

4 Permitting History

4.1 New Source Review Permitting for the Facility

Prevention of Significant Deterioration (PSD) permit PSD-X80-17 for the construction of the two GE Model PG7101E gas turbines was issued by EPA Region 10 September 25, 1980.

Order of Approval No. 2063 (superseded) was issued on August 25, 1980 for the installation of two GE Model PG7101E gas turbines (794 MMBtu/hr each). These turbines are also identified as Frame 7, Type 7101E, or GE Frame 7, or 7E, all referring to the same type of turbine.There is also one 4.2 million gallon diesel fuel storage tank (this tank was later determined to be 4.4681 million gallons which does not change the applicability of any rules). The Agency issued this NOC approval with no emission unit-specific approval conditions. Order of Approval No. 2063 was superseded and canceled by Order of Approval No. 6554.

Order of Approval No. 6461 was issued on April 25, 1996 for the installation of two Monsanto Brink Fiber Bed Model BK Chase 56X108ES60-3 lube oil mist eliminators (1,500 cfm each) to control emissions from the lube oil tanks. The Order of Approval includes particulate matter and opacity emission limits.

Order of Approval No. 6554 (superseded) was issued on July 9, 1996 to modify the operating hours of the gas turbines to match the limit in Prevention of Significant Deterioration Permit No. PSD-X80-17. This Order was superseded and canceled by Order of Approval No. 6860.

Order of Approval No. 6860 was issued on August 22, 1997 to incorporate the emission limits from Prevention of Significant Deterioration Permit No. PSD-X80-17.

Order of Approval No. 8436 was issued on October 9, 2002 for the installation of GE Breech-Load Fuel/Water Nozzles rated at 84 gpm of water as control equipment for the existing turbines.

4.2 Regulatory Orders Issued to the Facility

No regulatory orders have been issued to the facility.

4.3 Operating Permit Issuance and Renewal

4.3.1 Issuance of Original Permit

An air operating permit application was received by the Agency from Puget Sound Energy, Inc. on June 7, 1995 pursuant to WAC 173-401-500(3). The application was determined to be complete on July 28, 1995. The final permit was issued on March 21, 2000.

4.3.2 Renewal 1

On February 17, 2004, Puget Sound Energy, Inc. submitted an air operating permit renewal application. This was received on time with more than one year remaining on the active permit,

which expired on March 21, 2005. On April 17, 2004, the Agency sent a letter to Puget Sound Energy, Inc. indicating that the renewal application had been found to be complete. The final permit was issued on May 15, 2007.

4.3.3 Renewal 2

On April 22, 2011, Puget Sound Energy, Inc. submitted an air operating permit renewal application. This was received on time with more than one year remaining on the active permit, which expired on May 15, 2012. On May 6, 2011, the Agency sent a letter to Puget Sound Energy, Inc. indicating that the renewal application had been found to be complete. In accordance with WAC 173-401-640, Puget Sound Energy, Inc. operated under the authority of their permit shield from May 15, 2012, until the Agency issued this renewal of the operating permit.

4.3.4 Administrative Amendment 1

On November 17, 2008, the Agency received a request from Puget Sound Energy, Inc. to change the Responsible Official listed on the AOP to L.E. Odom. Administrative Amendment 1 to make this change was issued on February 18, 2009.

4.3.5 Administrative Amendment 2

On March 25, 2011, the Agency received a request from Puget Sound Energy, Inc. to change the Responsible Official listed on the AOP to Wayne Gould. Administrative Amendment 2 to make this change was issued on April 4, 2011.

4.3.6 Administrative Amendment 3

On January 9, 2013, the Agency received a request from Puget Sound Energy, Inc. to change the Responsible Official listed on the AOP to Ed Odom. Administrative Amendment 3 to make this change was issued on March 12, 2013.

4.3.7 Administrative Amendment 4

On November 6, 2018, the Agency received a request from Puget Sound Energy, Inc. to change the Responsible Official listed on the AOP to Charlie Sziebert. Administrative Amendment 4 to make this change was issued on November 28, 2018.

5 Compliance History

Onsite inspections for the Puget Sound Energy, Inc. Frederickson facility since the last permit renewal were conducted on the following dates:

- January 29, 2008
- March 11, 2008
- February 17, 2009
- October 12, 2009
- October 8, 2010
- November 9, 2011
- November 19, 2012
- October 2, 2013
- March 9, 2015
- May 11, 2016
- May 3, 2017
- May 14, 2018
- June 6, 2019
- January 21, 2022

Additional inspections of the facility were conducted via telephone, due to the COVID-19 measures to protect agency and PSE staff. These occurred on:

- August 4, 2020
- June 22, 2021

The facility is required to perform a stack test for NOx every five years. The last two tests were performed in 2013 and 2018. They were in compliance with the NOx limits and there were no concerns with the tests.

The Agency has not issued any written warnings or Notices of Violation for the facility since the previous permit was issued. In addition, the Agency has not received any complaints for the facility during the period.

6 Emission Inventory

The table below summarizes Puget Sound Energy, Inc.'s primary air emissions for the most recent available 5 years. Emission inventories are estimates of actual emissions from the facility developed by Puget Sound Energy, Inc. and submitted to the Agency annually. Emissions at this facility come primarily from the operation of the two gas turbines. Emissions will vary from year to year depending on the type and quantity of fuel combusted in each of the turbines.

Table 1. Emission Inventory Summary (tons per year)

Pollutant	2016*	2017	2018	2019	2020
Carbon Monoxide (CO)	--	12.56	13.21	19.89	7.049
Nitrogen Oxides (NO_X)	32.20	52.83	54.68	83.02	29.04
Volatile Organic Compounds (VOC)	--	0.43	0.91	1.39	0.4905
Particulate Matter (less than 10 microns in diameter) (PM_{10})	--	2.76	2.90	4.37	1.547
Sulfur Dioxide (SO_2)	--	0.56	0.83	4.37	1.547

* For calendar year 2016, only NO_x emissions were reported. Per PSCAA Regulation I, Section 7.09(a), emissions are only required to be reported if they exceed the thresholds in Section 7.09(a).

7 Compliance Assurance Monitoring, NESHAP and NSPS Applicability Review

7.1 Compliance Assurance Monitoring

The Compliance Assurance Monitoring (CAM) rule requires owners and operators to monitor the operation and maintenance of their control equipment, so they can evaluate the performance of their control devices and ensure they are working properly. The rule also requires that facilities report whether or not they are meeting established emission standards. If owners and operators of these facilities find that their control equipment is not working properly, the CAM rule requires them to take action to correct any malfunctions and to report such instances to the appropriate enforcement agency, PSCAA in this case. Additionally, the CAM rule provides some enforcement tools that allows environmental agencies to require facilities to respond appropriately to the monitoring results and ensure pollution control operations are as effective as represented by the facility.

The CAM rule applies at major sources with emission units that have control devices and emissions could exceed 100 tons per year if the control device was not operated. In accordance with 40 CFR Part 64, any emission unit that meets all three of the following criteria, and is not exempt under the CAM rule, requires a CAM Plan:

- The unit is subject to an emission limitation or standard for the applicable regulated air pollutant. [40 CFR 64.2(a)(1)]
- The unit uses a control device to achieve compliance with any such emission limitation or standard. [40 CFR 64.2(a)(2)]
- The unit has potential pre-control device emissions of the applicable pollutant of at least 100% of the major source amount. [40 CFR 64.2(a)(3)].

There are six main pieces of equipment regulated at the facility, two gas turbines with water injection for NOx control, two lube oil tanks with demisters, one black start engine and one diesel tank. The two turbines have been combined into one Emission Unit in the permit and the two lube oil tanks have also been combined into one Emission Unit. Only the stationary gas turbines have control devices (water injection) used to achieve compliance with an emission limitation on NOx. Potential pre-control NO_x emissions from the turbines are greater than 100 tons per year, so the CAM rule applies to the stationary gas turbines. There are two different NOx limits in the permit, a limit from

40 CFR 60 Subpart GG and one resulting from a new source review permit. The limit from Subpart GG is exempt from CAM as the rule was modified after November 15, 1990. The limit from the New Source Review permit is subject to CAM. Although the potential to emit of carbon monoxide is greater than 100 tons per year, there are no control devices for this pollutant and CAM does not apply.

EU ID and Description	CAM Regulated Pollutant	Pre-Control PTE Based on worst case fuel (tpy)	Post-Control PTE Based on Permit Limit (tpy)	Control Device	Emission Limit	Compliance Demonstration	Regulatory Citation
EU 1: Two simple cycle gas turbines fired on natural gas and distillate fuel with water injection	NOx	1,943	530	Water injection	144 lb/hr/unit on natural gas and 246 lbs/hr/unit on #2 fuel oil 530 tons/year from entire facility	Monitoring of actual water injection rate (lb/sec), required water injection rate (lb/sec), corresponding actual and required water-to-fuel ratios at each turbine	40 CFR 64.3 & 64.6(c)(1

A CAM plan for the stationary gas turbines was submitted with PSE's 2005 AOP renewal application. An updated CAM plan was submitted in 2011 as part of the 2012 renewal application. A second updated CAM plan was submitted in 2022 for this renewal. The Agency reviewed the 2022 plan and confirmed that the monitoring satisfies the requirements in 40 CFR 64.3. Based on the information in the plan, permit conditions in Section 2.A. specify the required monitoring in accordance with 40 CFR 70.6(a)(3)(i). PSE's 2022 CAM Plan is attached at the end of this Statement of Basis.

7.2 For this permit renewal, the Agency has added CAM monitoring requirements to ensure all applicable requirements of CAM are in the permit. NESHAP Applicability

As part of the renewal process, the Agency reviewed new federal National Emissions Standards for Hazardous Air Pollutants (NESHAPs) that might apply to this facility to determine applicability. Because the facility is not a major source of HAP, only area source NESHAPs could apply. The only NESHAP that applies is for Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ).

7.2.1 NESHAP: Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ)

The facility currently operates one diesel-fueled black start generator. The generator is subject to the Reciprocating Internal Combustion Engines (RICE) NESHAP and is considered an existing engine, since construction commenced before June 12, 2006 (constructed pre-2005 and moved to the site in 2005). Applicable requirements are listed in Section 2.B. of the operating permit. In accordance with 40 CFR 63.6645(a)(5), the initial notification and notification of compliance are not required for existing stationary RICE that are not subject to any numerical emission standards.

7.3 NSPS Applicability

As part of the renewal process, the Agency reviewed new federal New Source Performance Standards (NSPS) finalized since the last renewal that might apply to this facility to determine applicability. No new NSPS apply, but a summary of previous NSPS reviews are included below:

7.3.1 Standards of Performance for Stationary Gas Turbines (40 CFR Part 60, Subpart GG)

This NSPS applies to stationary gas turbines constructed after October 3, 1977 with a heat input rate equal to or greater than 10 MMBtu/hr. The stationary gas turbines in Emission Unit 1 were both constructed in 1981 and have a heat input rate of 794 MMBtu/hr each. As previously determined, NSPS Subpart GG applies to the stationary gas turbines. The permit contains requirements related to NO_x, SO_2, and other NSPS requirements in Section 2.

The NSPS requires the permittee to develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_X emission controls. The facility has developed a parameter monitoring plan that has some overlap with the CAM Plan, but also requires additional documentation. The parameter monitoring plan is included as an attachment to this Statement of Basis. The water injection rates required for compliance are not specifically identified in the permit, however the Agency and the permittee can determine compliance at any time by reviewing the "Water Injection Curves", the actual water injection rates, and the actual fuel consumption (either liquid or gaseous fuel) and confirming the emission rates are below those required by the permit. The monitoring plan is attached to this Statement of Basis.

7.3.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII)

The provisions of NSPS Subpart IIII apply to owners or operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines or are manufactured after July 1, 2006 and are certified fire pump engines. The black start engine (Emission Unit 3) was manufactured before April 1, 2006, and as previously determined NSPS Subpart IIII does not apply.

7.3.3 Standards of Performance for Stationary Combustion Turbines (40 CFR Part 60, Subpart KKKK)

This NSPS applies to stationary combustion turbines constructed, modified, or reconstructed after February 18, 2005 with a heat input rate equal to or greater than 10 MMBtu/hr. The stationary gas turbines in Emission Unit 1 were both constructed in 1981 and have not been modified or reconstructed after February 18, 2005. As previously determined, NSPS Subpart KKKK does not apply to the stationary gas turbines.

8 Explanation of Applicable Requirements Tables and Compliance Methods

Applicable requirements are listed in several sections of this operating permit as outlined below. The permit only lists the requirements that PSCAA has determined to be within the scope of the definition of "applicable requirements" under the operating permit program. Puget Sound Energy, Inc. is legally responsible for complying with all applicable requirements of the operating permit as well as other requirements that do not fit the definition of "applicable requirements" found in Chapter 173-401 Washington Administrative Code (WAC). Some of the applicable requirements contain terms or monitoring, maintenance and recordkeeping conditions for which an explanation is included in this statement of basis. The specific requirements are listed below, along with any necessary explanations in monitoring, maintenance, and recordkeeping conditions.

Applicable requirements that are not ongoing are not included in the permit because they are not in effect during the term of the permit and are considered obsolete. However, these requirements are addressed later in this statement of basis.

A condition was added for each emission unit that has an active Order of Approval to include Condition 1 from each of the Orders. This condition states, "Approval is hereby granted as provided

in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of PSAPCA." PSAPCA is understood to be the Puget Sound Clean Air Agency. This condition was added into the permit to make it clear that the facility is always required to install and establish only that which was approved by the Order of Approval. Any changes to anything that was included in the Notice of Construction and/or Order of Approval would need to go through the New Source Review process.

8.1 Requirement Tables

Sections 1 and 2 of the permit have applicable requirements set up in tables. Section 1 contains the requirements that apply facility-wide to all the emission units regulated by this permit. These requirements also apply to emission units identified in Section 2 of the permit. If the compliance method for any requirement in Section 1 is more extensive for a specific emission unit, that requirement is repeated in Section 2 of the permit with the additional monitoring, maintenance and recordkeeping requirements.

The tables list the citation for the "applicable requirement" and the effective date in the second column. In some cases, the effective dates of the "Federally Enforceable" requirement and the "*State Only*" requirement are different because either the state (or local authority) has not submitted the regulation to the Environmental Protection Agency (EPA) for approval into the State Implementation Plan (SIP), or the state (or local authority) has submitted it and the EPA has not yet approved it. "*State Only*" effective dates are in italicized font and shall be understood to include the Washington Department of Ecology and PSCAA. When the EPA does approve the new requirement into the SIP, the old requirement will automatically be replaced and superseded by the new requirement. The new requirement will be enforceable by the EPA as well as PSCAA from the date that it is adopted into the SIP, and the old requirement will no longer be an applicable requirement.

The requirement tables in Sections 1 and 2 also contain a brief description of the applicable requirement. This description is not an enforceable condition. In the event of conflict or omission between the information contained in the brief description and the actual statute or regulation cited, the requirements and language of the actual statute or regulation cited shall govern. For more information regarding any of the requirements cited in the second column, refer to the actual requirements cited.

The "Compliance Method" listed in the tables refers to permit conditions below the tables that include monitoring, recordkeeping and reporting obligations the permittee must conduct to comply with the permit. Following the monitoring method is an enforceable requirement of this permit.

The "Reference Test Method" listed in the requirements table is the test method to be used when a source test is required to determine compliance. In some cases where the applicable requirement does not cite a test method, one has been added. If a reference test method is not listed with the requirement, this means a test method is not applicable to the requirement. Reference Test Methods included in the permit are listed in Section 7 of the permit and include the applicable averaging period.

Changes to the AOP during the Renewal Process:

A new table was added prior to Section 1 that gives a general description of the four emission units at the facility. The table is reproduced below and lists the emission units regulated under this permit located at the Puget Sound Energy, Frederickson Generating Station. The information in the table is for informational purposes only.

Source	Description	Install Date	ISO Ratings at Base Load	
			Natural Gas	No. 2 Diesel
Emission Unit No. 1	General Electric (GE) Frame 7, Type 7101E, natural gas and distillate oil-fired, water-injected	~1980	74.4 MW capacity (each)	72.9 MW capacity (each)

Turbines 1 and 2 (One stack each unit)	simple-cycle combustion turbine generator		788 MMBtu/hr heat input (LHV) (each)	780 MMBtu/hr heat input (LHV) (each)
Emission Unit No. 2 Two oil mist collection systems for Turbines 1 and 2 (One stack each unit)	Atmospheric ventilation of the lube oil system	~1980 Replaced in 1993	--	--
Emission Unit No. 3 Black Start Generator	2,876 HP diesel fired	2005	--	--
Emission Unit No. 4 Diesel Fuel Tank	Steel tank with fixed cone roof and capacity of 4,468,100 gallons	1981	--	--

The table includes the three emission units included in the previous permit and adds in a diesel tank that was not included previously. The tank is not exempt from being included in the Air Operating Permit nor is it an insignificant emission unit per the AOP rules. The only applicable requirements for the tank are those in Section 1 that apply facility-wide.

Sections 1 and 2 are reformatted in the AOP renewal so that all facility-wide requirements and the corresponding compliance methods are in Section 1, and the emission unit specific requirements and corresponding compliance methods are in Section 2. The intent was to make it easier to connect the applicable requirement and the compliance method.

In the previous AOP, some of the applicable requirements listed the effective date, and others listed the adoption date. For consistency, the AOP has been updated to list the effective date for all applicable requirements.

8.2 Compliance Methods

As noted above, compliance methods listed in the applicable requirements table are in permit conditions listed below the tables. The compliance methods include monitoring, recordkeeping and reporting obligations specific to the requirement that will be used by the permittee in determining if they are in continuous or intermittent compliance. In some cases where the applicable requirement has little or no ongoing monitoring requirements, monitoring has been added. This is called "gapfilling" and is authorized under WAC 173-401-615(1)(b).

Whenever PSCAA uses a "gap-filling" monitoring method, we determine the monitoring frequency using criteria contained in EPA's April 30, 1999 Draft *Periodic Monitoring Technical Reference Document*. We consider "the five criteria" in determining how often the facility should perform a monitoring activity: hourly, once per shift, daily, weekly, monthly, quarterly, annually, or once per five-year permitting period. The five criteria are initial compliance, margin of compliance (monitoring method designed so source will identify potential problems early and take action before a violation occurs), variability of process and emissions, environmental impacts of problems, and other technical considerations.

9 General Facility-wide Emission Limits and Requirements

9.1 RACT Requirement (Condition 1.1)

PSCAA Regulation I, Section 3.04 establishes reasonably available control technology (RACT) requirements. There is no monitoring required. Condition 6.19 of the permit specifies that in accordance with WAC 173-401-605(3), emission standards and other requirements contained in rules or regulatory orders in effect at the time of this operating permit renewal shall be considered RACT for purposes of permit renewal.

Changes to the AOP during the Renewal Process: WAC 173-400-040(1)(c), General Standards for Maximum Emissions – General Requirements, was replaced by PSCAA Regulation I, Section 3.04, Reasonably Available Control Technology, in the 4/22/20 approval of the SIP. This condition has been updated to list PSCAA Regulation I, Section 3.04 as the enforceable requirement.

9.2 Opacity Standards (Condition 1.2)

PSCAA Regulation I, Section 9.03, Emission of Air Contaminant: Visual Standard, prohibits more than 20 percent opacity for more than three minutes in an hour and applies to all stationary sources. The compliance method is included in Condition 1.14 and requires monthly inspections for visible emissions from all emission points at the facility during each month that the facility operates. The source must take corrective action or use the reference test method, Ecology Method 9A, to determine opacity if any visible emissions are noted. Based on a review of the facility activities, including compliance evaluations, the basis for monthly monitoring is still valid and the permit renewal retains the same monitoring requirements.

Changes to the AOP during the Renewal Process: The monitoring method and frequency for the opacity monitoring have not changed, but the recordkeeping requirements have been included in

the compliance method and language has been added to make it clear that failure to implement one of the response actions must be reported as a deviation.

The 9/20/93 version of WAC 173-400-040(1) was previously listed as an enforceable requirement for opacity standards. Changes to the state regulation caused WAC 173-400-040(1) to be renumbered as WAC 173-400-040(2). In the most recent SIP approved 4/22/2020, EPA has identified the 5/1/04 version of PSCAA Reg. I, Section 9.03 as applicable in the Agency's jurisdiction and replaces the WAC visual emission standard at 173-400-040

(2). WAC 173-400-040(1) was removed from the list of enforceable requirements.

9.3 PM Standards (Conditions 1.3 and 1.4)

9.3.1 General Process Units

PSCAA Regulation I, Section 9.09, Particulate Matter Emission Standards, limits particulate emissions to 0.05 grain per dry standard cubic foot (gr/dscf) from equipment used in a manufacturing process. The monitoring method in the AOP is based on the assumption that particulate emissions less than 0.05 gr/dscf usually do not generally result in visible emissions over 20 percent opacity. Therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in Condition 1.2. The emission units that are general process units are unlikely to generate particulate matter emissions above this grain loading standard if operating as permitted.

Changes in the AOP Renewal: The monitoring method and frequency still include the opacity monitoring from the previous permit, but an additional requirement was added, Condition 5.12 Investigations. This condition allows the Agency or the Department of Ecology to require a test to determine whether the emission units are complying with the standard.

In addition, the recordkeeping requirements have been included in the compliance method. Language has been added to make it clear that failure to implement any one of the response actions must be reported as a deviation.

WAC 173-400-060, Emission Standards for General Process Units, was replaced by PSCAA Regulation I, Section 9.09 in the 4/22/20 approval of the SIP, so WAC 173-400-060 has been removed as an enforceable requirement.

9.3.2 Combustion Sources

PSCAA Regulation I, Section 9.09, Particulate Matter Emission Standards, limits particulate emissions to 0.05 gr/dscf corrected to 7% oxygen from fuel burning equipment (i.e., equipment that produces hot air, hot water, steam, or other heated fluids by external combustion of fuel) combusting natural gas.

Aside from the combustion turbines that comprise Emission Unit 1, there are small (<5 MMBtu/hr) natural gas-fired hot water heaters, which have very low particulate matter emissions when maintained and operated in good working order and should not have visible emissions. Therefore, the Agency has determined that the same compliance method as is used for particulate matter standards for general process units is adequate – monthly opacity monitoring. The combustion turbines in Emission Unit 1 are subject to additional monitoring requirements.

Changes in the AOP Renewal: The particulate limit for combustion sources in PSCAA Regulation I, Section 9.09 was not listed as a separate requirement in the previous version of the AOP, so it was added.

The monitoring method and frequency have not changed, but the recordkeeping requirements have been included in the compliance method and language has been added to make it clear that failure to implement one of the response actions must be reported as a deviation.

WAC 173-400-050(1) and WAC 173-400-060 Emission Standards for Combustion and Incineration Units and Emission Standards for General Process Units, respectively, were replaced by PSCAA Regulation I, Section 9.09 in the 4/22/20 approval of the SIP, so WAC 173-400-050(1) has been removed as an enforceable requirement and WAC 173-400-060 is not an applicable requirement in the Agency's jurisdiction

9.4 Fugitive Emissions (Conditions 1.5 and 1.6)

PSCAA Regulation I, Section 9.15, Fugitive Dust Control Measures, and WAC 173-400-040(4)(a), General Standards for Maximum Emissions – Fugitive Dust, both require reasonable precautions to minimize or prevent fugitive emissions. PSCAA's rule also describes specific examples of reasonable precautions. Quarterly facility-wide inspections and complaint response are sufficient to monitor for changes that would cause fugitive emissions or unexpected buildup of dust.

Changes in the AOP Renewal: The monitoring method and frequency have not changed, but the language has been updated to reflect the updated format. For facility-wide inspections, Puget Sound Energy, Inc. is required to examine/inspect the same elements as is currently required. For both the facility-wide inspections and complaint response, recordkeeping requirements have been included in the compliance methods and language has been added to make it clear failure to implement one of the response actions must be reported as a deviation.

The 9/20/93 version of WAC 173-400-040(8), General Standards for Maximum Emissions – Fugitive Dust Sources, was previously listed as an enforceable requirement for fugitive dust emissions standards. Changes to the state regulation caused WAC 173-400-040(8) to be renumbered as WAC 173-400-040(9). WAC 173-400-040(9)(a) was replaced by PSCAA Regulation I, Section 9.15 in the 4/22/20 approval of the SIP, so the 9/20/93 version of WAC 173-400-040(8) has been removed as an enforceable requirement.

9.5 Other Standards (Conditions 1.7 through 1.9)

PSCAA Regulation I, Section 9.11, Emission of Air Contaminant: Detriment to Person or Property, and WAC 173-400-040(5), General Standards for Maximum Emissions – Odors, are similar requirements that address emissions that may be environmentally detrimental or cause a nuisance. The monitoring method is based on responding to complaints and quarterly general inspections of the facility to identify any emissions that are likely to be injurious to human health, plant or animal life, or property, or that unreasonably interfere with enjoyment of life and property. Receiving complaints does not necessarily mean Puget Sound Energy, Inc. is in violation of this requirement, but Puget Sound Energy, Inc. has a responsibility to investigate complaints and take corrective action if necessary. PSCAA has not noted nor has PSCAA received complaints about Puget Sound Energy, Inc. causing emissions that are likely to be injurious to health, plant or animal life, or property or that unreasonably interferes with enjoyment of life and property. Puget Sound Energy, Inc. does not handle or process material that is likely to cause fugitive dust emissions.

The Agency has determined that the as-needed complaint response and the quarterly facility-wide inspections required in Condition 1.15 of the permit are sufficient to monitor for changes that would cause nuisance emissions.

Changes in the AOP Renewal: The requirements in WAC 173-400-040(3), General Standards for Maximum Emissions – Fallout, is a state-only requirement and is not federally enforceable as it regulates emissions which EPA does not regulate. The rule specifies that Puget Sound Energy, Inc. shall not deposit particulate matter beyond the property boundary in sufficient quantity to interfere unreasonably with the use and enjoyment of property have been included as a separate requirement. The monitoring method and frequency have not changed, but the language has been updated to reflect the updated format. For facility-wide inspections, Puget Sound Energy, Inc. is required to examine/inspect the same elements as is currently required. For both the facility-wide inspections and complaint response, recordkeeping requirements have been included in the compliance methods and language has been added to make it clear that failure to implement one of the response actions must be reported as a deviation.

The 9/20/93 version of WAC 173-400-040(5) was previously listed as an enforceable requirement for nuisance standards. Changes to the state regulation caused WAC 173-400-040(5) to be renumbered as WAC 173-400-040(6). WAC 173-400-040(6) was replaced by PSCAA Regulation I, Section 9.11(a) in the 4/22/20 approval of the SIP, so the 9/20/93 version of WAC 173-400-040(5) has been removed as an enforceable requirement.

9.6 SO_2 Standard (Condition 1.10)

PSCAA Regulation I, Section 9.07, Sulfur Dioxide Emission Standard, limits sulfur dioxide emissions to 1,000 ppmvd (corrected to 7% oxygen for fuel burning equipment).

Aside from the combustion turbines that comprise Emission Unit 1, there are small (<5 MMBtu/hr) natural gas-fired hot water heaters. The combustion turbines in Emission Unit 1 fire natural gas primarily, but are also capable of firing on distillate oil. The black start generator in Emission Unit 3 is fired only on low sulfur distillate fuel oil with <0.05% sulfur. Based on the amount of sulfur in natural gas fuel, it has been shown that combustion units that are fired on natural gas cannot exceed the 1,000 ppm SO_2 limits. Diesel fuel used in the black start engine would also not have high enough sulfur content to exceed these limits. Therefore, no additional monitoring is required for natural gas and diesel combustion. Additional equipment-specific monitoring is required for the combustion turbines in Emission Unit 1.

Changes in the AOP Renewal: The previous permit had "No monitoring required" as the compliance method. This was changed and a compliance method was added, Condition 5.12 Investigations Condition 5.12 Investigations and Testing. This condition allows the Agency or the Department of Ecology to investigate and require a test to determine whether the emission units are complying with the standard.

The 9/20/93 version of WAC 173-400-040(6), General Standards for Maximum Emissions – Sulfur Dioxide, was previously listed as an enforceable requirement for maximum emissions standards. Changes to the state regulation caused WAC 173-400-040(6) to be renumbered as WAC 173-400-040(7). WAC 173-400-040(7) was replaced by PSCAA Regulation I, Section 9.07 in the 4/22/20 approval of the SIP, so the 9/20/93 version of WAC 173-400-040(6) has been removed as an enforceable requirement and WAC 173-400-040(7) was not added.

9.7 Hydrochloric Acid Standard (Condition 1.11)

PSCAA Regulation I, Section 9.10, Emission of Hydrochloric Acid, specifies that hydrochloric acid emissions shall not exceed 100 ppm (dry) corrected to 7% O_2 for combustion sources, including both internal and external combustion units. Puget Sound Energy can only burn pipeline-grade natural gas and distillate fuel oil, and neither of these fuels contains chlorine in sufficient quantities to cause the HCl emission limit to be exceeded.

Changes in the AOP Renewal: The previous permit has had "No monitoring required" as the compliance method. This was changed and a requirement was added, Condition 5.12 Investigations and Testing. This condition allows the Agency or the Department of Ecology to investigate and require a test to determine whether the emission units are complying with the standard.

9.8 Maintain Equipment in Good Working Order (Condition 1.12)

PSCAA Regulation I, Section 9.20(b), Maintenance of Equipment, requires Puget Sound Energy, Inc. to maintain equipment or control equipment not subject to Section 9.20(a) in good working order. Section 9.20(a) applies to sources that received a Notice of Construction Order of Approval under PSCAA Regulation I, Article 6. Since it applies to specific emission units, Section 9.20(a) requirements are included in Section 2 of the permit.

Changes in the AOP Renewal: The monitoring method has been revised to refer to facility-wide monitoring and the facility O&M Plan requirements. The facility-wide inspections provide monitoring of the general effectiveness of Puget Sound Energy, Inc.'s O&M Plan. This general monitoring and compliance with the O&M Plan provides sufficient monitoring criteria to certify that the equipment has been maintained in good working order. However, PSCAA reserves the right to evaluate the maintenance of each piece of equipment to determine if it has been maintained in good working order.

Since RCW 70.94.152(7) applies to equipment that received a Notice of Construction Order of Approval, references to this requirement were removed from Section 1 of the permit and added to Section 2 of the permit.

The specific requirements for the O&M Plan in the Agency's Regulation 1, section 7.09(b) have been explicitly included in the permit at EPA's request as new condition 1.19. This new condition was added to the compliance method for conditions 1.12 and 1.13.

9.9 O&M Plan (Condition 1.13)

In accordance with PSCAA Regulation I, Section 7.09(b), General Reporting Requirements for Operating Permits – Operation and Maintenance Plan, Puget Sound Energy, Inc. is required to develop and implement an O&M Plan to assure continuous compliance with PSCAA Regulations I, II, and III. The requirement specifies that the Plan shall reflect good industrial practice, but does not define how to determine good industrial practice. To clarify the requirement, PSCAA added that, in most instances, following the manufacturer's operations manual or equipment operational schedule, minimizing emissions until the repairs can be completed, and taking measures to prevent recurrence of the problem may be considered good industrial practice. This language is consistent with the Ecology requirement in WAC 173-400-101(4). PSCAA also added language establishing criteria for determining if good industrial practice is being used. These include, but are not limited to, monitoring results, opacity observations, review of operations and maintenance procedures, and inspections of the emission unit or equipment. PSCAA added this wording in response to Washington State court decision, Longview Fibre Co. v. DOE, 89 Wn. App. 627 (1998), which held that similar wording was not vague and gave sufficient notice of the prohibited conduct.

As described in Condition 5.5, Puget Sound Energy, Inc. must report to PSCAA all deviations, including any instances where it failed to promptly repair any defective equipment. In addition, Puget Sound Energy, Inc. has the right to claim certain problems were a result of an emergency (Condition 5.14) or unavoidable (Conditions 5.15 – 5.19).

Changes in the AOP Renewal: The specific requirements for the O&M Plan in the Agency's Regulation 1, section 7.09(b) have been explicitly included in the permit at EPA's request as new condition 1.19. This new condition was added to the compliance method for conditions 1.12 and 1.13.

Following these requirements demonstrates that Puget Sound Energy, Inc. has properly implemented the O&M Plan, but it does not prohibit PSCAA or EPA from taking any necessary enforcement action to address violations of the underlying applicable requirements after proper investigation.

9.10 Other Changes in the AOP Renewal

RCW 70.94.040 has been deleted from facility-wide applicable requirements. The provisions of RCW 70.94 RCW (now codified at RCW 70A.45), or the ordinances, resolutions, rules or regulations adopted thereunder are included in the permit as applicable requirements.

10 Emission Unit Specific Applicable Requirements

Section 2 contains requirements that apply to specific emission units at the facility.

10.1 Requirements that Apply to Emission Unit No. 1 (Two Combustion Turbines)

The applicable requirements for Emission Unit No. 1 are listed in Table 2 of the operating permit, Conditions 2.1-2.11. The compliance methods specific to the turbines are in Conditions 2.11-2.49. Only conditions with substantive changes are described below.

Changes in the AOP Renewal:

- **Condition 2.4:** The requirement paraphrase was rearranged to separate out the NO_x limits from the SO_2 limits. The compliance method was updated for the NOx limits to eliminate the NSPS requirements as the limit is from an Agency OA and a PSD permit. Compliance with the fuel sulfur content was updated to refer to recordkeeping for the sulfur content which is based on documentation from the oil supplier. The third change was to add a compliance method, Condition 5.12 Investigation and Testing, which allows the Agency to require a stack test at any time for either or both the NO_x emissions and the SO_2 emissions.
- **Condition 2.6:** Three changes were made to the compliance methods for this condition. First, Condition 2.21 Recordkeeping was added as a compliance method. It appears that not referring to this condition as a compliance method was an inadvertent omission in the previous permit. Second, the NSPS compliance methods were removed from this condition

as the applicable requirement is an Agency issued Order of Approval. Third the compliance methods for 40 CFR 64, Compliance Assurance Monitoring, were updated to include a new condition, "Need for Improved Monitoring" per 40 CFR 64.7(e). This was not in the previously issued permit, which appears to have been an oversight.

- **Condition 2.7:** The reference to 40 CFR 60.332(a)(1) was moved to a separate requirement from Order of Approval No. 6860, Condition 5 and PSD-X80-17 (AOP condition 2.5). The distinctions are described below.
    - Condition 5 from Order of Approval No. 6860 addresses the NO_x and SO_2 emission limits on hourly basis, compared to the NO_x and SO_2 emission limit from NSPS for which the compliance is determined through at least 3 hours average (minimum of 3 runs, minimum of 1 hour per run as required by 40 CFR 60.8) as indicated by 40 CFR 60.335 (b)(2).
    - Condition 5 from Order of Approval No. 6860 defines Y as the manufacturer's rated heat rate at peak load. For the same limit, NSPS Subpart GG defines Y as the manufacturer's rated heat rate at manufacturer's rated load.

  In addition, the compliance methods for Condition 2.7, the Subpart GG NOx limits, were changed to be solely the NOx emission compliance methods required by the NSPS reflected in conditions 2.11, 2.12, 2.13, 2.15 and 2.16. Condition 2.14 was not included as it is a requirement from an Agency Order of Approval. The previous AOP had included CAM monitoring requirements for this limit. They were deleted as a compliance method because the NSPS is new enough that the CAM requirements do not apply to this limit.
- **Condition 2.10**: This condition was added for completeness. It is Condition 1 from both OA 6860 and OA 8436.

10.1.1 Compliance Methods and Requirements (Conditions 2.11 – 2.49)

Conditions 2.11 through 2.49 contain the compliance methods and requirements for emission monitoring, NSPS, recordkeeping and reporting, and Compliance Assurance Monitoring.

Changes in the AOP Renewal:

- **Condition 2.9:** In the previous AOP, monitoring was based on the O&M Plan requirements. This monitoring method has been revised to also refer to the facility-wide inspection requirements. The facility-wide inspections provide monitoring of the general effectiveness of Puget Sound Energy, Inc.'s O&M Plan. This general monitoring and compliance with the O&M Plan provides sufficient monitoring criteria to certify that the equipment has been maintained in good working order. However, PSCAA reserves the right to evaluate the maintenance of each piece of equipment to determine if it has been maintained in good working order. The compliance method was also updated to reflect the minimum specific elements required to be included the O&M Plan.
- **Condition 2.11:** The language describing the NO_x source testing frequency was updated from "During the term of the permit, at least once every 5 years or whenever a single turbine accumulates 10,000 hours or more of operation…" to "At least once every 5 years or whenever a single turbine accumulates 10,000 hours or more of operation, whichever is earlier…" to improve the clarity of the testing frequency. In addition, language was added referring to the requirements of 40 CFR 60.335 for the source test. The condition was modified since EPA Method 20 cannot directly measure the NO_x emissions rate in pounds per hour and to provide further clarification on how to demonstrate compliance with NO_x emission limits. Section II.A.2(b)(ii)(b) & (c) of the previous AOP (Test Methods and Procedures) have been removed, since Condition 2.11 now refers to the requirements of 40 CFR 60.335. An NSPS requirement was added as the basis for this condition. It was previously identified solely as gap filling.
- **Condition 2.13:** Condition 2.13 includes the first sentence of the language from Section II.A.2.(b)(ii)(a) Monitoring of Operations of the previous AOP. However, language related to the parameter monitoring plan has been removed, and the language from NSPS Subpart

GG related to the parameter monitoring plan has been added as Condition 2.16. Also additional monitoring requirements from 40 CFR 64 were added to this condition. Although the CAM sections don't apply to the NSPS requirements, this compliance method is used for non-NSPS applicable requirements also. The condition explicitly states that the CAM requirements in 40 CFR 64.7(c) do not apply to the NSPS applicable requirements.

- **Condition 2.14:** The reference to compliance specifically with Condition 2.6 was deleted for consistency in the wording of the compliance methods throughout the permit. The condition is a compliance method for Condition 2.6 but is also a compliance method for other conditions.
- **Condition 2.15**: The language requiring Puget Sound Energy, Inc. to compute annual averages of the monitoring data on a monthly basis has been removed from this condition. Condition 2.15 describes the monitoring frequency and identifies the parameters that need to be recorded for the CMS. The CMS data is to reassure continuous compliance with the NO_x short term limit. It does not appear that there is any need to calculate a monthly or annual average for the monitoring data. The compliance with the long term NOx emissions limit can be determined through Condition 2.21. The condition was also updated to specifically identify the monitoring data is from the water injection system.
- **Condition 2.16:** This condition was previously not in the permit and is added as it is an applicable requirement of 40 CFR 60.334(g).
- **Conditions 2.17 through 2.20**: The requirements regarding monitoring of SO_2 emissions have been reorganized so that it is more consistent with 40 CFR 60.334(h) & (i). Section II.A.2(b)(ii) Monitoring of Operations (b)(1) of the previous AOP has been removed, since it is only one of the options allowed by NSPS and is being addressed by 40 CFR 60.334(i)(1). Section II.A.2(b)(ii) Monitoring of Operations (b)(2) of the previous AOP has also been removed and is addressed by 40 CFR 60.334(h)(3). The heading for this section was updated to reflect that it is the NSPS monitoring and only apply to NSPS applicable requirements.
- **Condition 2.21:** The language from Section II.A.2.(b)(i) of the previous AOP for Condition 4 of Order of Approval No. 6860 (now contained in Condition 2.21) has been updated to include a requirement to calculate and record NO_x emissions on a monthly and 12-month rolling basis within 15 days of the end of each month. This condition has also been updated to reference the NO_x emission limit in Condition 2.6, which contains the NO_x emission limits from Condition 5 of Order of Approval No. 8436. This condition was also updated to explicitly state that the emissions for each 12-month period will be used to determine compliance with the ton per year emission limits. This is required to ensure the limit is federally enforceable. In addition it was edited to add the recordkeeping requirements for SO2 and to clarify the requirements. *(Note: The NOCOA requires records to be kept for no less than two years, but Condition 6.3 of the Title V permit requires these records to be kept for no less than five years).*
- **Condition 2.22:** Edited to clarify the requirement to record the facility-wide fuel consumption on a monthly and 12-month rolling basis to demonstrate compliance with the fuel usage limit. The reference specifically to Condition 2.2 was deleted for consistency with all other compliance methods.
- **Condition 2.23**: Language has been added clarifying that Puget Sound Energy, Inc. shall evaluate the distillate oil certifications for compliance with the sulfur limits and shall not accept fuel with sulfur contents above the limits. Also the use of the phrase "new oil" was changed for clarity to "unused oil." The intention is to ensure that oil that was previously used and recovered is not burned in the turbines. The requirement has not changed, only the way it is referred to in the permit has changed.
- **Condition 2.24:** This Condition was added under the gap filling authority to supplement the Recordkeeping section. It explicitly requires that the permittee maintain copies of all current fuel oil contracts that include a certification that the fuel oil they deliver meets all of the specifications in condition 2.1 and 2.65.

- **Condition 2.28:** This condition requires that Puget Sound Energy, Inc. notify the Agency of any exceedances of the sulfur dioxide and nitrogen oxides emission limits from PSD-X80-17 within 10 days of their occurrence. In the previous AOP, this was included in Section V.R, but it has been separated out and included in the emission unit-specific requirements for clarity. During the AOP renewal process the permittee requested this be changed to allow 30 days to report the deviation. Because the requirement comes from the PSD permit, it cannot be changed without modifying the PSD permit.
- **Condition 2.29:** This condition was not in the previous permit and is added as it is Condition 7 of Order of Approval No. 8436.
- **Conditions 2.31 through 2.33:** The requirements regarding excess emission reporting and ice fog have been reorganized so that it is more consistent with 40 CFR 60.334(j). Also the condition related to emergency fuel has been removed as the facility does not have any emergency fuel onsite. Although the turbines can be run on diesel, it is not only a fuel that could be used during an emergency, but also a fuel the facility would use based on economics. This does not meet the definition of emergency fuel in the NSPS.
- **Conditions 2.33 through 2.38:** These conditions include the general provisions from NSPS Subpart A related to performance testing. In the previous AOP, this was included in the standard terms and conditions in Section V.N.2, but it has been separated out and included in the emission unit-specific requirements, since the turbines are the only emission units subject to an NSPS. The previous condition in Section V.N.2(g) has been removed. It cited 40 CFR 60.276a(f), which is not an applicable requirement for Puget Sound Energy, Inc.
- **Conditions 2.39 through 2.49:** These conditions are the requirements for NOx Compliance Assurance Monitoring. Changes were made to some of these conditions to include all applicable CAM requirements in 40 CFR 64.
- **Condition 2.39:** The reference to Condition 2.7 of the permit was deleted. The limit in Condition 2.7 is from a recent NSPS and is not subject to CAM.
- The previous EU-1.9 requirement was removed from the applicable requirements table, since this is part of the NSPS excess emissions rules covered under Conditions 5.15,-5.27 of the AOP renewal.
- The previous EU-1.10 requirement related to retention of records required by NSPS Subpart A was moved from the applicable requirements table to the Compliance Methods section (now Conditions 2.25 and 2.26).
- The previous condition from Section II.A.2.(b)(ii)(c) was replaced by condition 2.30 which more closely matches the language in the NSPS section 60.7.

10.2 Requirements that Apply to Emission Unit No. 2 (Lube Oil Tank)

The requirements that apply specifically to Emission Unit No. 2 are listed in Table 3 of the operating permit. This emission unit includes a lube oil tank with two Monsanto Brink fiber bed model Chase 56X108ES60-E mist eliminators, rated at 1,500 cfm each, one for each turbine. Conditions 2.51 through 2.53 in Table 3 are based on conditions from Order of Approval No. 6461. In addition, Agency Regulation I, Section 9.20(a) requires Puget Sound Energy, Inc. to maintain equipment or control equipment that received a Notice of Construction Order of Approval in good working order. Since only Section 9.20(b) is included in the general facility-wide requirements in the operating permit, Section 9.20(a) requirements are listed in the emission unit-specific requirements (Condition 2.53 for Emission Unit No. 2).

Changes in the AOP Renewal: The description of the control equipment was updated to more accurately reflect the equipment type (mist eliminators rather than demisters) as requested by the permittee. The monitoring method and frequency have not changed, but the language has been updated to reflect the updated format. For mist eliminator inspections, Puget Sound Energy, Inc. is required to inspect the same elements as is currently required. Recordkeeping requirements have been included in the compliance methods and language has been added to make it clear that a failure to implement one of the response actions must be reported as a deviation.

PSCAA Regulation I, Section 9.20(a) was added as an applicable requirement in Table 3.

10.3 Requirements that Apply to Emission Unit No. 3 (Black Start Engine)

This emission unit includes one existing stationary diesel black start engine subject to the applicable requirements in 40 CFR Part 63, Subpart ZZZZ. For this unit, Puget Sound Energy, Inc. must comply with the requirements in Table 2d of the NESHAP as contained in Condition 2.66. These requirements are triggered based on hours of operation, or annually, whatever comes first. Compliance methods are included in Conditions 2.66 – 2.70.

Changes in the AOP Renewal: Applicable requirements in 40 CFR Part 63, Subpart ZZZZ for the black start engine were not included in the previous AOP renewal and are included as a new section of the AOP.

11 Standard Terms and Conditions

Some of the requirements that are more general in nature are included in Section 3, Standard Terms and Conditions. This section also contains the standard terms and conditions specifically listed in WAC 173-401-620. These terms have been updated to reflect the most recent rules and permit language.

12 General Permitting Requirements

Section 4 of the permit includes the requirements for renewing, revoking, reopening, amending, and modifying the operating permit. It also includes the new source review requirements, both minor NSR and Prevention of Significant Deterioration requirements. This section has been edited to more accurately reflect the Air Operating Permit regulations.

13 General Compliance Requirements

General compliance requirements are included in Section 5 of the permit. These include certification and reporting requirements, requirements associated with inspections and investigations, and compliance testing requirements. Actions required for an affirmative defense for emergencies or excess emissions are also included in this section. This section was edited to require annual compliance certifications to cover a calendar year which is more in line with PSE's and other facilities' compliance certification requirements. Finally, this section provides a table summarizing the effective date of the regulations in the permit at the time of permit issuance. Regulations that are approved into the Washington State Implementation Plan (SIP) are federally enforceable. In some cases, there are two versions of the regulation because the newer version has not been adopted into the SIP. In this case, the older version of the regulation would be federally enforceable and the current rule would only be enforceable by the Agency (or State). The SIP is updated on a somewhat regular basis and what is contained in the SIP can change over time.

Changes in the AOP Renewal: Data recovery requirements were previously listed in Section V.Q of the AOP and are now listed in Condition 5.10. Language was added to clarify that data do not need to be collected during any period that the monitored equipment does not operate. In addition, language was added requiring that the deviation reports required by Condition 5.5 include an explanation of each instance in which the permittee failed to meet the data recovery requirements of this condition for any monitored process or parameter and any instances of reconstructing lost data.

Condition 5.3 Compliance Certification: The Permittee requested that the annual compliance certifications due date be updated to conform with the calendar year and their other reporting obligations. The permit was changed to accommodate this request and future annual certifications are due January 30 of each year. Language was added to coordinate the new due date with the due date from the previous permit. The final certification under the previous permit was due April 19, 2022, covering the prior 12-month period ending on March 20, 2022. In this permit renewal the first annual compliance certification covers the period from March 21, 2022 to December 31, 2022 and is due January 30, 2023. All future annual certifications are also due January 30th and cover the previous calendar year.

Condition 5.33 Federal Enforceability: This section was updated to reflect the newest approval of the Agency's State Implementation Plan. Additional language was added to the introductory paragraph for clarity and completeness.

14 Generally Applicable Requirements

Some of the requirements that are generally applicable are included in Section 6 of the permit. This includes record retention, asbestos requirements, open burning requirements, stratospheric ozone and climate protection requirements, chemical accident prevention provisions in 40 CFR Part 68, concealment and masking, tampering, RACT requirements, annual emission reporting requirements, greenhouse gas reporting requirements and non-road engine notification requirements.

15 Obsolete Requirements

PSD-X80-17 includes several conditions that are considered obsolete:

- Condition 4 states that the approval is void if onsite construction is not commenced within 18 months of receipt of approval or if construction is discontinued for a period of 18 months.
- Condition 6.a includes an initial compliance testing requirement as required by 40 CFR 60.335.
- Condition 7 includes a requirement to notify EPA and WDOE in writing within 30 days of the commencement of construction and startup of the equipment.

Several of the NSPS reporting requirements are considered obsolete since they are one time requirements and the compliance date has already passed:

- In accordance with 40 CFR 60.7, notification of initial startup (Notice of Completion associated with their Notice of Construction Order of Approval).

The following Orders of Approval are also obsolete:

Order of Approval No.	Approval Date	Project Description	Why obsolete
2063	8/25/1980	Two GE Model PG7101E Heavy Duty Gas Turbines at 794 Million Btu/hr Each; One 4.2 Million Gallon Diesel Storage Tank.	Cancelled and superseded by Order of Approval No. 6554, issued 7/9/1996
6554	7/9/1996	Two GE Model PG7101E Heavy Duty Gas Turbines at 794 MMBtu/hr each, and one 4.2 Million Gallon Diesel Fuel Storage Tank.	Cancelled and superseded by Order of Approval No. 6860, issued 8/22/1997

16 Inapplicable Requirements

The requirements identified in Section 8 of the air operating permit do not apply to the facility, or to the specific emissions units identified in the permit. The permit shield applies to all requirements so identified.

17 Insignificant Emission Units and Activities

Section 9 of the permit addresses insignificant emission units and activities. In accordance with WAC 173-401-530(1), determination of an emission unit or activity as insignificant does not exempt the unit or activity from any applicable requirement.

An emission unit or activity is insignificant based on one or more of the criteria identified in WAC 173-401-530. This includes categorical exemption, exemption based on emissions being below emission thresholds in WAC 173-401-530(4), or exemption based on size or production rate. Activities that generate only fugitive emissions which are subject to no applicable requirement other than generally applicable requirements can also be classified as insignificant. Categorically exempt units or activities do not need to be listed in the permit application, but all others do. Puget Sound Energy, Inc. has identified these to be the following:

Description	WAC 173-401-533(2)
Lubricating Oil Storage and Handling	WAC-173-401-532(3), (4) and (69)
Glycol Storage and Handling	WAC-173-401-532(4)
Waste Oil Storage and Handling	WAC-173-401-532(4)
Trucks, Fork Lifts, Autos, etc.	WAC 173-401-532(10)
Plant Upkeep/Painting	WAC 173-401-532(33)
Landscaping Activities	WAC 173-401-532(43)
Comfort Air Conditioning	WAC 173-401-532(46)
Natural Draft Hoods/Safety Valves	WAC 173-401-532(47)
Vents/Bathroom Facilities	WAC 173-401-532(48)
Office Activities	WAC 173-401-532(49)
Personal Care Activities	WAC 173-401-532(50)
Personal Cars	WAC 173-401-532(54)
Repair and Maintenance Activities	WAC 173-401-532(74)
Battery Banks	WAC 173-401-532(77)
Air Compressors	WAC 173-401-532(88)

Puget Sound Energy, Inc. requested that the natural gas space heater and water heaters (1 MMBtu/hr) be listed as insignificant due to capacity below the specified levels in WAC 173-401-533. This is included in Table 9 in Section 9 of the AOP.

Monitoring requirements for insignificant emission units are detailed in Condition 1.17 of the permit. In essence, Puget Sound Energy, Inc. will be required to use good industrial practices to maintain insignificant emission units, and to promptly repair defective equipment or shut down the unit until defective equipment can be repaired. Puget Sound Energy, Inc. will not have to keep records of maintenance of insignificant emission units except when such equipment is inspected and a problem requiring prompt repair is discovered during a quarterly plant-wide inspection.

18 Public Comments and Responses during renewal process

<include discussion after public comment period>

19 EPA Comment Period

<include discussion after EPA review>

Attachment 1

PSE Compliance Assurance Monitoring (CAM) Plan

Water Injection for Nitrogen Oxides (NO_X) Control on Turbines

Compliance Assurance Monitoring (CAM) Water Injection for Nitrogen Oxides (NO_X) Control

Frederickson Generating

FacilityBACKGROUND

I. EMISSIONS UNIT

Description: General Electric (GE) Frame 7, Type 7101E Simple Cycle Combustion TurbinesIdentification: Units 1 & 2

Facility: Puget Sound Energy – Frederickson Generating Station, Frederickson, WA

II. APPLICABLE REGULATIONS, EMISSION LIMIT, AND MONITORING REQUIREMENTS

Regulatory Order:	Puget Sound Clean Air Agency (PSCAA) Notice of Construction Approval #8436 Condition 5 dated October 9, 2002
Emission Limits:	NO_X emissions from each unit shall not exceed 144 lb/hr per unit when firing natural gas. NO_X emissions from each unit shall not exceed 246 lb/hr per unitwhen firing #2 distillate. NO_X emissions from the entire facility shall not exceed 530 tonsper year.
Regulatory Order:	Puget Sound Clean Air Agency (PSCAA) Notice of Construction Approval #6860 Condition 6 dated August 22, 1997
Emission Limits:	NOx emissions from each unit shall not exceed 388 lb/hr per unit. NOx emissions from the two units shall not exceed 580 tons peryear.

Monitoring Requirements: NO_X emissions from Units 1 & 2 shall be measured every 10,000hours of Units 1 & 2's operation or at least once every five years during the Air Operating Permit term. Emission testing shall be done at the most frequent load level and shall follow Title 40 Code of Federal Regulations (CFR) Part 60 Subpart A, AppendixA Method 20 or 7E, and the relevant parts of 40 CFR 60.335.

Monitoring Requirements: Puget Sound Energy (PSE) shall report NOx emissions annually in the Emissions Inventory Report to PSCAA. Per 40 CFR 60.334, NOx emission calculations shall be based on fuel consumption, the NOx emission factors from the most recent source test, and the water injection/turbine load relationships. Using a continuous monitoring system, PSE shall record water injection (lb/sec), fuel use (lb/sec), and actual water injection tofuel ratio, required water injection to fuel ratio, and ambient airtemperatures in 15-minute intervals. PSE shall compute and record one-hour averages for the fuel consumption rate, water injection rate, and hourly water to fuel ratio from all readings taken over each clock hour.

III. Control Technology

Water injection shall be used to control NO_X from Units 1 & 2 during operation. The key elements of the monitoring approach are presented in Table 1.

TABLE 1. POINT SOURCE EMISSION UNITS AT PUGET SOUND ENERGY - FREDERICKSON

REQUIREMENT	PARAMETER
I. Indicator:	
A. Measurement Approach	Emissions Stack Testing
	NO_X emissions from Units 1 & 2 shall be measured every 10,000 hours of Unit's operation or once every five years. Emission testing shall be done at the most frequent load level and shall follow 40 CFR Part 60 Subpart A, Appendix A Method 20 or 7E, and the relevant parts of 40 CFR 60.335.
B. Measurement Approach	Water-to-fuel Ratio Monitoring
	Hourly water-to-fuel ratios shall be monitored to determine compliance with 40 CFR 60.332(a) and Order of Approval #8436 Condition 5.
II. Indicator Range:	
A. Indicator Range Emissions Stack Testing	An acceptable range of NO_X emissions includes no more than 144 lb/hr per unit during natural gas combustion and no more than 246 lb/hr per unit during #2 distillate combustion in a one-hour period.

QIP Threshold	A one hour period during which NO_x emissions exceed 144 lb/hr per unit during natural gas combustion or exceed 246 lb/hr per unit during #2 distillate combustion, shall be reported to PSCAA within 30 days after the end of the month that the exceedance occurred. If necessary, corrective actions shall be taken immediately.
B. Indicator Range	An acceptable water-to-fuel ratio shall be in compliance with 40 CFR 60.322(a) and Order of Approval #8436 Condition 5

REQUIREMENT	PARAMETER
C. Water-To-Fuel Ratio Monitoring QIP Threshold	For any one-hour period during which the average water-to-fuel ratio falls below the NO_x compliance limit as calculated in 40 CFR 60.332(a) and Order of Approval #8436 Condition 5, as determined by the GE compliance chart, activate alarm and notify PSCAA within 12 hours. If necessary, corrective actions shall be taken immediately. For any one-hour period the average water-to-fuel ratio falls below the minimums established in the GE compliance chart and the calculated NOx emissions exceed 388 lb/hr per unit during natural gas combustion or #2 distillate combustion shall notify EPA and PSCAA in writing within 10 days following the event. The written 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. For any one-hour period the average water-to-fuel ratio falls below the minimums established in the GE compliance chart and the calculated NOx emissions exceed either 144 lb/hr per unit during natural gas combustion or exceed 246 lb/hr per unit during #2 distillate combustion shall be reported to PSCAA within 30 days after the end of the month that the event occurred. The written report shall include an estimate of the resultant emissions, a narrative report of the cause, duration, and steps taken to correct the problem and avoid a recurrence. For any one-hour period the average water-to-fuel ratio falls below the minimums established in the GE compliance chart shall be reported to PSCAA within 30 days after the end of the month that the event occurred. The written report shall include a narrative report of the cause, duration, and steps taken to correct the problem and avoid a recurrence.

TABLE 1, CONTINUED. POINT SOURCE EMISSION UNITS AT PSE - FREDERICKSON

III. Performance Criteria:	
A. Data Representativeness	NO_X emissions testing shall be measured from the Unit's exhaust stack by source testing. Emission test results shall meet the data quality requirements of the test methodology. Water-to-fuel ratio and fuel consumption monitoring system shall be accurate to within ± 5.0 percent and comply with 40 CFR 60.334 (a).
B. Verification of Operational Status	Emissions tests shall be performed as specified. The monitoring system shall be operated according to manufacturer specifications.
C. QA/QC Practices and Criteria	Emissions testing shall be done at the most frequent load level and shall follow 40 CFR Part 60 Subpart A, Appendix A Method 20 or 7E, and the relevant parts of 40 CFR 60.335. Emission test results shall meet the data quality requirements of the test methodology.
IV. Performance Criteria:	
D. Monitoring Frequency and Data Collection Procedures	On a semi-annual basis, PSE shall submit to PSCAA the required AOP monitoring report for the preceding 6 months in written (or electronic if permitted by PSCAA) form to PSCAA within 30 days of the end of each six-month period. (Unless a different testing and reporting schedule has been approved by PSCAA). In the case of an exceedance, the report shall document the month of the exceedance occurred, the endurance and magnitude of the exceedance, the probable cause of the occurrence, correction actions taken or planned, and the name of any other agency contacted. PSCAA shall be notified as soon as possible and in no case later than twelve hours after a breakdown, upset, startup or shutdown conditions occurs which results in or may have resulted in: a) exceedance of an emission or ambient standard; b) a potential threat to human health or safety.

JUSTIFICATION

I. BACKGROUND

The General Electric (GE) Frame 7, Type 7101E simple cycle dual-fueled combustion turbines (Units 1 & 2) are located at the Frederickson Generating Station. Each turbine has the capabilityto supply a gross power output of approximately 75 MW. NO_X emissions from Units 1 & 2 are controlled using water injection.

II. RATIONALE FOR SELECTION OF PERFORMANCE INDICATORS

The NO_X performance indicators were selected based on the approval conditions outlined in theFrederickson Generating Station's Air Operating Permit No. 10028.

Stack testing every 10,000 hours of Unit's operation or once every five years and fuel monitoring shall be considered satisfactory to determine performance regarding NO_X emissions on a concentration or mass basis.

The water-to-fuel ratio system indicates compliance with requirements to maintain NO_X emissions at or below 144 lb/hr (on gas) and 246 lb/hr (on oil), by comparing the recorded water-to fuel ratios against the GE compliance chart. Compliance with this condition is further confirmed with the periodic stack testing.

The annual emissions shall be calculated by using emission factors determined through stacktesting and fuel use records.

These indicators are justified by 40 CFR 64.4, which states, "*If an owner or operator relies on presumptively acceptable monitoring, no further justification for the appropriateness of that monitoring should be necessary other than an explanation of the applicability of such monitoringto the unit in question.*" Units 1 & 2 are already performing these monitoring methods required by the New Source Performance Standards (NSPS) subpart GG and therefore may use them to satisfy the monitoring requirements of this CAM plan.

III. RATIONALE FOR SELECTION OF INDICATOR RANGES

The indicator range is selected to show compliance with the conditions of the Frederickson Station's Air Operating Permit No 10028. Stack testing and fuel monitoring shall provide data tocalculate NO_X emissions on an annual basis and provide an accurate estimate of emission concentration within the exhaust stack of Units 1 & 2. Water-to-fuel monitoring shall provide information to determine compliance with 40 CFR 60.335.

TEST AND IMPLEMENTATION PLAN

I. TEST PLAN

NO_X emissions from Units 1 & 2 shall be measured every 10,000 hours of Units 1 & 2 operation. Emission testing shall be done at the most frequent load level and shall follow 40 CFR Part 60 Subpart A, Appendix A Method 20 or 7E and the relevant parts of 40 CFR 60.335.

On a semi-annually basis, PSE shall submit to PSCAA the required AOP monitoring reports forthe preceding 6 months in written (or electronic if permitted by PSCAA) form to PSCAA within30-days of the end of each six-month period (unless a different testing and reporting schedule has been approved by PSCAA).

In the case of an exceedance, the report shall document the month of the exceedance occurred, theendurance and magnitude of the exceedance, the probable cause of the occurrence, correction actions taken or planned, and the name of any other agency contacted.

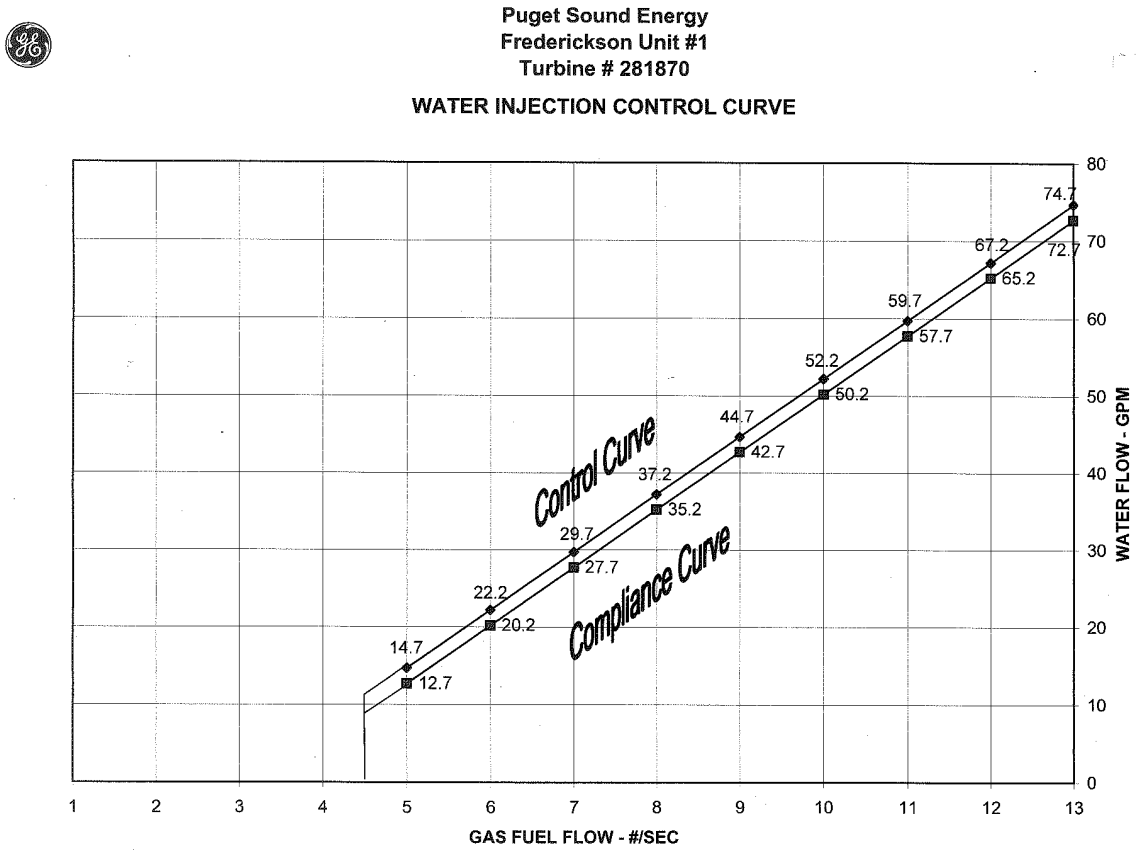
PSCAA shall be notified as soon as possible and in no case later than twelve hours after a breakdown, upset, startup or shutdown conditions occurs which results in or may have resulted in:

a) exceedance of an emission or ambient standard; b) a potential threat to human health or safety.

II. IMPLEMENTATION PLAN

No implementation plan is necessary for stack testing and water-to-fuel ratio monitoring, because these monitoring techniques are already in operation for Units 1 & 2.

Compliance Chart for Gaseous Fuel Unit 1

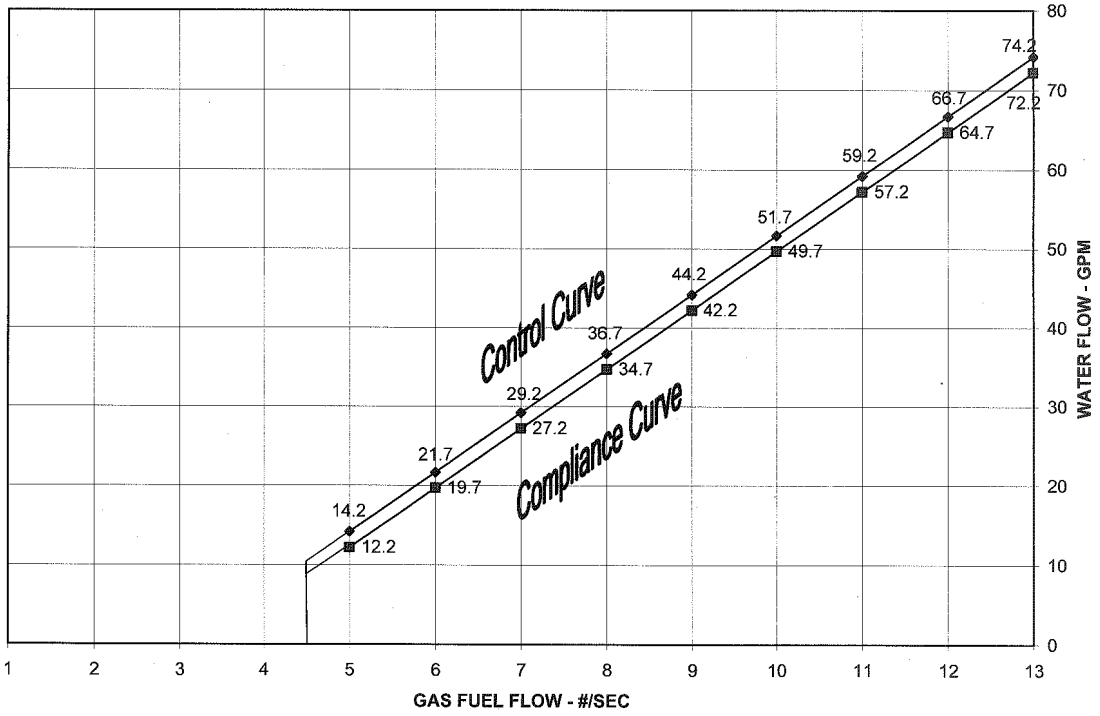


10/23/2002

Compliance Chart for Gaseous Fuel Unit 2

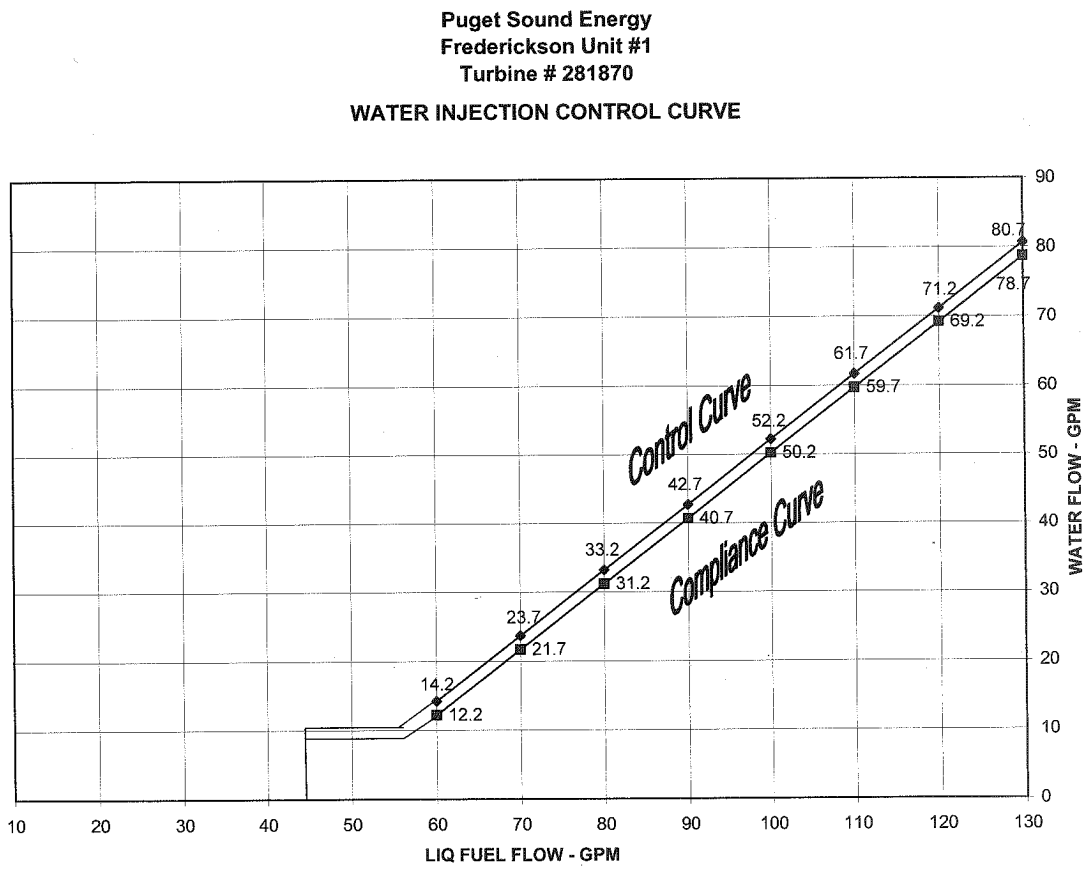
Puget Sound Energy
Frederickson Unit #2
Turbine # 281871

WATER INJECTION CONTROL CURVE



10/23/2002

Compliance Chart for Liquid Fuel Unit 1



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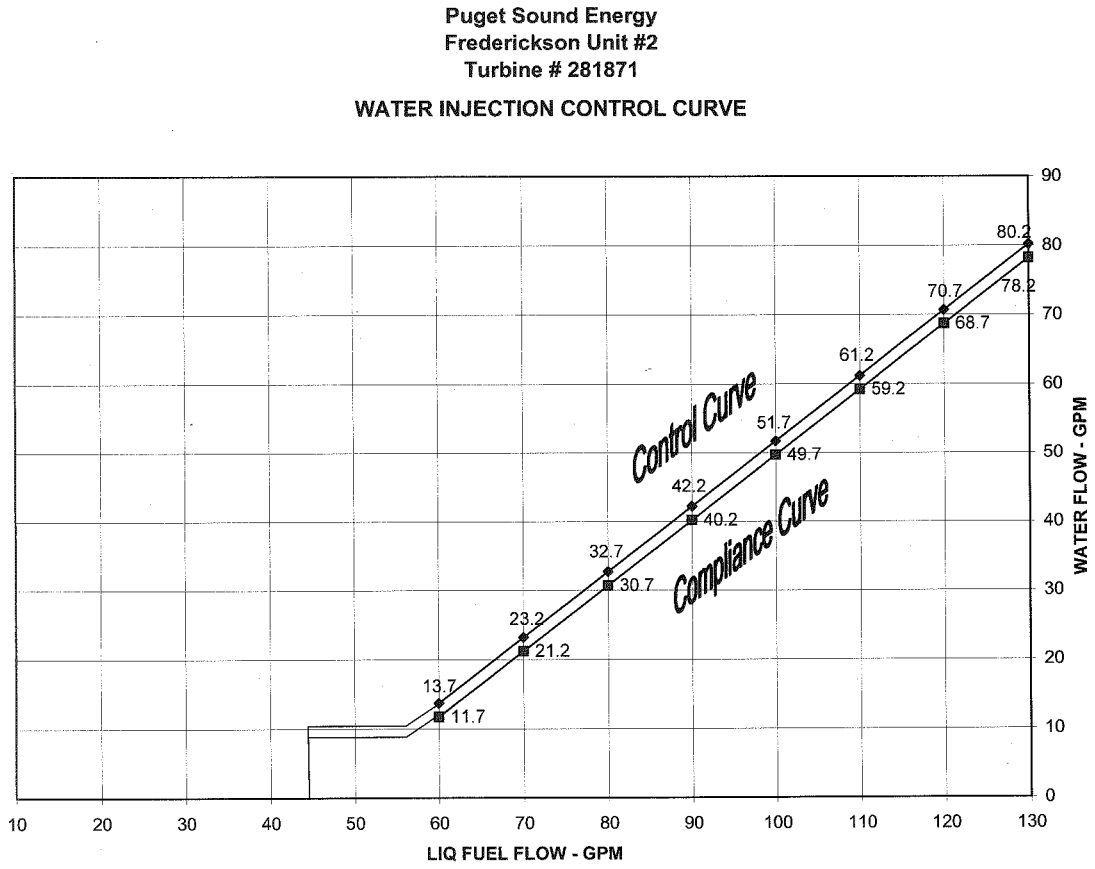
Compliance Chart for Liquid Fuel Unit 2



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